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ABSTRACT

This set of learning modules was developed during a project to deliver workplace literacy instruction to individuals employed in the more than 50 businesses related to the activities of the Port of Baltimore. It is intended to accomplish the following objectives: familiarize students with basic concepts of geography; give students knowledge of geographic techniques, basic cartographic techniques and analysis, information about world trade and transport, knowledge of ongoing issues in world geography, and a concept of regional and cultural relativity; enhance students' knowledge of the world's regions and nations; familiarize students with common trade routes; and enhance students' understanding of the world marketplace. The first module is intended to introduce students to the course objectives and intent and determine the extent of their geographic knowledge. The following topics are covered in the remaining seven modules: geographic techniques and concepts; the North Atlantic region; South America; Africa; the Middle East; Northern and Central Asia; and East Asia, Pacifica, and Australia. Each module contains objectives, procedures, and student handouts. (MN)

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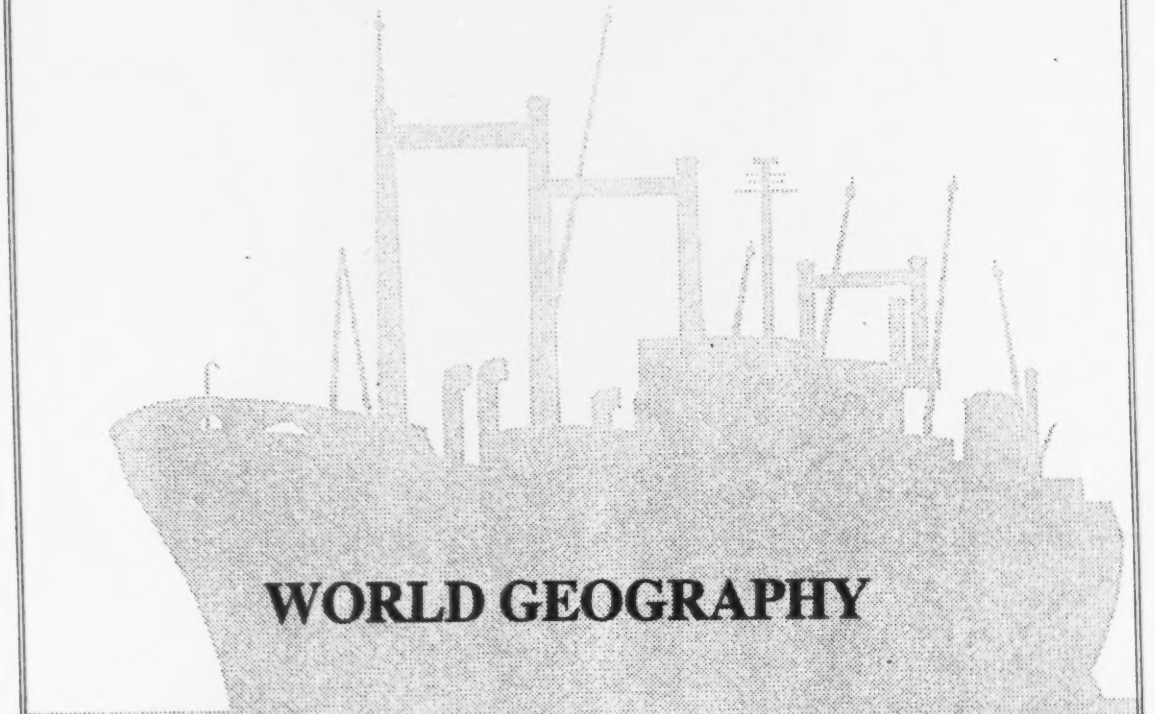
ED 381 659

THE PORT OF BALTIMORE WORKPLACE SKILLS DEVELOPMENT PROJECT



WORLD GEOGRAPHY

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CE 068 763

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Course

The World Geography course being offered through the Port of Baltimore Workplace Skills Development Project is a course designed for the employees of Port of Baltimore business offices. The course objectives are as follows:

*to familiarize the students with the basic concepts of geography;
*to provide the students with a knowledge of geographic techniques;
*to provide the students with basic cartographic techniques and analysis;
*to enhance the students' knowledge of the world's regions and nations;
*to provide the students with information about world trade and transport;
*to familiarize the students with common trade routes;
*to enhance the students' understanding of the world marketplace;
*to provide the students with a knowledge of ongoing issues in world geography;.
*to provide the students with a concept of regional and cultural relativity.

The course is designed in eight one hour modules. Each module will consist of a lecture and discussion. Any material that is not covered will be finished at the beginning of the next class. Students will be encouraged to ask any relevant questions.

The lecture materials includes examples relating to trade and transport. By providing the students with this type of real world example, they will be learning in a context that is familiar to them. Nystrom World Atlas: A Resource for Students, Nystrom, Division of Herff Jones, Inc. Chicago, 1995, is used as a text for the course.

MODULE 1 - INTRODUCTION

Objectives:

1. To determine the extent of the students' geographic knowledge.
2. To familiarize the students with the course objectives and intent.
3. To introduce the class to the course format and outline the material.

Procedures

1. To promote interaction, students and instructor will introduce themselves.
2. Students will be asked to provide the instructor in writing with a question on a topic in geography that they are curious about.
3. Instructor will give a brief lecture discussing the course format and content.

INTRODUCTION

The German philosopher Emmanual Kant once stated that science was comprised of three basic areas:

- disciplines that study particular objects and phenomena (e.g. biology);
- disciplines that look at things temporally (e.g. history);
- disciplines that examine features within a spatial context (e.g. geography).

Geography deals with the examination of spatial relationships. Often these relationships involve human interaction with the environment. Geographers study and discuss where particular phenomena are located, why they are located there and the changes that have occurred or are occurring with respect to that feature or process.

Geography combines both humanistic and scientific elements. There are different types of geographical approaches or techniques. Specifically they are **special or regional geography** and **general or systematic geography**. Regional geography provides an inventory-like analysis of an individual place (region). This technique discusses numerous elements that are unique or common to a particular region. Systematic geography deals with the universal laws and principles that apply to ail places. Within the systematic approach are specific fields of study, such as biogeography and urban geography. These specific fields of study are recognized as **topical** subjects of geography.

There are two major subfields of geography, using either the regional or topical approach. These two subfields are **human** and **physical** geography. These two fields overlap in many instances, providing a bridge between the physical and social sciences. The creation of this link, although not unique to geography, is one of its major characteristics.

Since geography deals with spatial relationships, some relevant terms need to be defined. Phenomena within a given region or at a specific point can be described in terms of **density, pattern** and **dispersion (distribution)**. Other key concepts are **location** and **region**.

In order to describe the extent of a particular phenomenon, geographers use terms such as density, pattern and dispersion. The density of an element is the overall occurrence of a specific phenomenon within a given area. Pattern recognition is a skill that geographers acquire; it connects them to the field of visual arts. Patterns can be defined as the geometric arrangement of the distributed phenomenon. Some common descriptive terms used for patterns are linear, centralized, uniform, and random. Geographers look for consistencies and dynamics

among the particular patterns they view and then attempt to determine what factors have led to the existing state of the phenomenon. Finally, dispersion or distribution refers to the extent of the distributed feature with respect to the total size and shape of the area studied.

Location can be defined in relative or absolute terms. An absolute location is an exact point that is defined by a specific coordinate system. Locations that are relative are defined in terms of the site as it relates to other places, particularly the surrounding regions. Location is defined in part by the scale of the phenomena being studied and their area.

Geographers often use distance and time to help analyze particular phenomena and their relative locations. Cost effectiveness and value can be assessed using the principles of **absolute distance and time distance.** With respect to transport and trade, **cost distance** is often calculated in order to determine the most efficient mode or route of transport. Geographers take into account various obstacles, such as topography and costs, when determining the most efficient methods of transport.

Geography deals with areas or regions. A region is a territory or area that exhibits a certain amount of uniformity. Regions can be either **formal or functional**. Formal regions are determined by their descriptive elements, such as mountains. Functional regions are defined according to a particular organizing activity, such as farming. Functional regions also include any type of governmental jurisdiction, such as a county or state. Therefore, the concept of a region is abstract and exists only in the mind of those defining and using the idea.

In order to establish the link between this conceptualized region and visual data source that can be seen and interpreted by others, the geographer uses an essential tool, **cartography**. Cartographic images or maps, as they are generally referred to, enable the geographer to present, promote and make evident the concepts which are abstract. Maps are graphic representations of selected elements within a given region. Maps display many of the basic geographic elements, such as distance, direction, size and shape and also contain more detailed information, such as patterns and distributions. Maps provide the essential means of displaying and studying spatial relationships.

The computer age has revolutionized the field of cartography. The ability to access, store, manipulate and analyze data has increased dramatically through the use of digital data. **Geographic information systems (GIS)** enable geographers to model and manipulate vast quantities of information to aid in the study of particular phenomena. The GIS uses an approach analogous to a series of overlaid transparencies. Each coverage contains data about a different aspect or element of the study area or phenomena. The most useful function of the GIS is its ability to model or predict particular scenarios.

Module 2
Geographic Techniques and Concepts

Objectives

1. To increase the students' geographic awareness and knowledge.
2. To familiarize students with standard geographic concepts and techniques.
3. To elicit questions and comments from students.
4. To outline major topics within the discipline of geography.
5. To familiarize students with cartographic techniques and transport geography.
6. To relate the study of geography to life events.

Procedures

1. Students will be shown the basic techniques for cartographic analysis.
2. Students will be provided with additional articles on world trade.
3. Students and instructor will discuss how geography is incorporated into their work and lives on an everyday basis.
4. Overhead projections will be used to aid in cartographic analysis.
5. A world projection will show regions to be discussed in later lectures.

Topics in Geography

Geography is one of the social sciences. Geographers have been able to create a strong link between the social and physical sciences, perhaps more so than any other social discipline. Furthermore, people use geography in their everyday lives, and are often unaware of the fact.

Spatial knowledge and understanding is a very important element in many of the world's processes and in communications. Without the ability to define where things are in both concrete and relative terms, everyday life would be very difficult.

Geographers study a wide spectrum of topics, some of which are listed below:

- Population dynamics (demography);
- Cultural issues and landscapes;
- Language and Communications;
- Religion
- Politics
- Agriculture, Industry, Service and other occupational elements;
- Urban dynamics;
- Environmental issues;
- Physical features;
- World resources;
- Biogeography;
- Transportation.

The world's diversity and opportunities are shown by geography in many ways. Geography examines the natural and human environments, and the manner in which we interact with them.

Geography allows us to study the past and present and to predict the future. Geography is used in planning and management projects all over the world, with all types of subjects and people. Geographers are able to provide a variety of integrated information to aid in rational decision making. Geography provides a global perspective on many of the world's problems and concerns and seeks to find methods by which these obstacles can be overcome. The concept of interdependence and cooperation in today's world is closely related to geography and its major elements.

Trade and Industry Basics

Economic development in the world constantly changes. Several factors have led to the development of different types and locations of economic activity and growth. These include the existence of raw materials, cultural aspects, the timing of economic developments and the dynamics of global relations. Although all of these elements affect economic development, the relative importance of each is unclear. Industrialization has a considerable impact, of course.

There is a close link between industry and trade. There is also a close correlation between highly industrialized societies and national wealth. Industrial societies often rely upon foreign markets to maintain or increase their economic growth.

Manufacturing is present everywhere and exists in many forms. Since the Industrial Revolution, which began in Britain in the eighteenth century, manufacturing has become one of the greatest sources of production, employment and profit in the world. It has also increased the amount and type of trade that takes place in the global economy. Both trade and manufacturing benefit from new technology.

Historically, manufacturing has been limited by certain factors, including availability and location of natural resources, location of markets, availability of labor, and the ability to process and distribute both raw materials and finished products. Any type of economic development requires land, labor and capital.

Although it appears that large reserves of natural resources are critical to a nation's success in developing a manufacturing base, in reality, an abundance of raw materials is seldom a critical factor in determining the location of manufacturing plants. Nations possessing great quantities of raw materials are in a position to benefit from them. But modern machines, extractive processes and methods of bulk transport have enabled manufacturers to build plants at a great distance from the site of the raw material. Therefore, nations possessing such quantities of raw materials are not always industrialized and are often poor or underdeveloped. Examples of such nations are Brazil and Zaire, both of which contain vast natural resources and yet are neither highly industrialized nor wealthy.

Similarly, the greater access to power sources due to efficient transport of coal, oil and electricity has decreased the importance of power as a factor, although energy is still essential for manufacturing. Japan illustrates this principle: it is one of the most industrialized nations in the world while importing almost 90 per cent of its energy, usually in the form of oil from southwestern Asia.

Labor may also influence where manufacturing plants are located, but the impact is relative to the type of industry. In large refining industries, fewer skilled workers are needed, and labor costs are a relatively small portion of the manufacturing cost. Therefore, plant location will tend to be based on other elements in this type of industry. By contrast, textile manufacturers have higher labor needs and costs; therefore, they tend to be more significantly influenced by the abundance or absence of cheap labor. Recently, American-owned companies with export oriented products have begun building manufacturing plants overseas, for example, in Taiwan, to take advantage of cheaper labor. Key technological advances in computerization and robotics have begun to decrease the importance of the location of labor near manufacturing facilities.

The ability to transport raw materials and finished products efficiently may influence the location of an industry. For example, seaports are often ideal sites for manufacturing because they permit easy import and export and ideal connections to various modes of transport. Railroads and major trucking routes can be effectively integrated with seaports. Cargo can then be distributed via train, ship or truck to its designated location. Major international ports like New York, Rotterdam and Tokyo illustrate this process.

Consumers or the relevant marketplace also have an impact on the location of manufacturing. Bulkier products and lower value items tend to be produced near the source of demand. An example would be cement or other building products. By contrast, higher value products and items easily transported tend to show up as exports. Examples of such products are military hardware and electronic equipment.

Areas with established manufacturing and support services tend to further growth. And areas controlling the majority of the wealth of a nation or region influence development and generally attract a greater amount of manufacturing. Regions rich in mineral reserves or agriculture are less dependent on outside sources for these essential items, so they tend to import less than they export. In general, regions possessing a well developed infrastructure tend to be ideally suited to support diverse and expanding industrial manufacturing. The key to developing a strong positive trade balance is to increase both the amount and value of exports.

The key to industrial development and wealth is not necessarily the proximity of the plant to raw materials but rather the ability to process those raw materials into items or products having value in the marketplace. Through processing or refining, manufacturers add value to raw materials, increase the impact of a product on consumers, and swell their profits.

Basics of Cartography

Cartography is one of the major fields within geography. It is one of the primary tools of a geographer. Maps and other geographic types of images, i.e. remotely sensed data, provide the geographer with an exceptional manner of portraying and analyzing data. Maps are able to convey large amounts and diverse types of spatial information quickly and effectively to an audience. Proper map design and display are crucial to the effectiveness of the image on the audience.

Cartography is a very dynamic and diverse area of geography. The power of maps enables the cartographer to create bold statements and depict important trends and patterns in a spatial context. There are a number of basic elements that the cartographer and geographer must address when creating or using maps.

Initially, the purpose of the map must be established. This entails becoming familiar with the information or subject on display, with the audience, and with a final design which allows the audience to interpret the data on the image. Often a cartographer uses a **basemap** in order to establish the general features of the map being created. The cartographer often must still interpret or recreate parts of the original image in order to display the desired data and effect on the new map.

Cartographers and geographers must conceive a map's image before creating it. The abstract image combines elements of basemaps, derived data and creativity. An effectively designed map will not only provide useful information to viewers, but will also attract and hold their attention. This mental map the cartographer sees is similar to the mental maps people use every day in order to travel from one place to another or to relate certain phenomena in a spatial context.

However, mental images are not always sufficient, and, therefore, tangible maps are produced. A map is simply an interpretation of a specific place or phenomena. Cartographers have quite a lot of freedom in displaying the characteristics of the area portrayed. They also have an obligation to viewers and users to create a map of high integrity and sufficient accuracy. The dilemma of displaying a three dimensional object, the earth, on a two dimensional surface, the map, is the pervasive obstacle confronting cartographers.

Maps contain four basic elements: **distance, direction, shape and size.** A variety of **projections** has been developed to display these different elements. Each projection has a number of the basic elements displayed accurately, and each is used for different purposes. By changing the aspect of a projection, the cartographer is able to portray certain characteristics more prominently, as well as display more complete coverage. The aspect is the portion from which an image is viewed. The

only type of projection which contains all four elements is a globe, whose aspect is infinite.

Although many maps show world projections of some type, there are other map images as well, due to changes in scale. A map's scale is determined by its relative size to its real equivalent, and is generally depicted by a fractional representative line or a statement of comparative differences. The generalization of a map (remember graphs are only a representation) is also dependent on the scale of the map. Large scale maps show more details of an area; small scale maps tend to be more general.

Maps vary in usefulness. Political maps show territorial boundaries and are useful for general reference or distance comparisons; street maps are useful for local travel. They are more tangible than political maps. Maps can also show physical features of regions, i.e. topographic maps, as well as the distribution of intangible phenomena, i.e. thematic maps. Cartograms allow the audience to see the relation of regions or areas with respect to particular variables.

Maps generally contain a **legend** which explains the various symbols and characteristics of the image. A legend usually gives the scale and often holds the compass rose, which indicates the direction of the cardinal points on the map. Any specific information essential to the interpretation of the map is also located in the legend.

Maps are essential to geography: they form the basis to begin spatial analysis. A map is a tangible source that can be referenced and easily displayed. It is portable and now very dynamic thanks to computerized cartography. Maps and other graphic images often provide a solid basis for a geographer's hypotheses or curiosities. They provide the ideal place on which to display and simulate real world distributions and patterns, which is the heart and soul of the geographer's work.

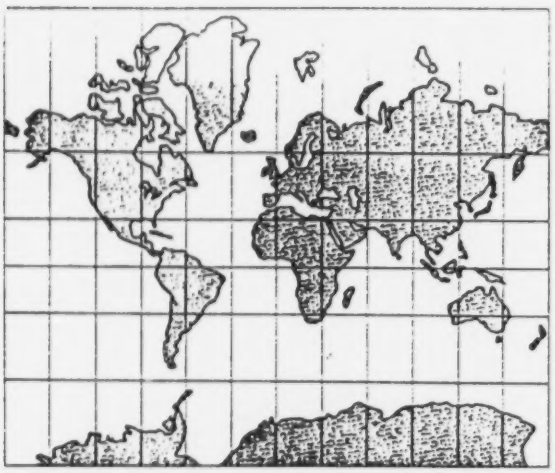
WORLD MAP PROJECTIONS

Map projections are the means by which the curved surface of a globe is transferred to the flat surface of a map. Because the earth is a sphere, a globe is its only perfect model. Even though there are an infinite number of map projections, none can be as accurate as a globe.

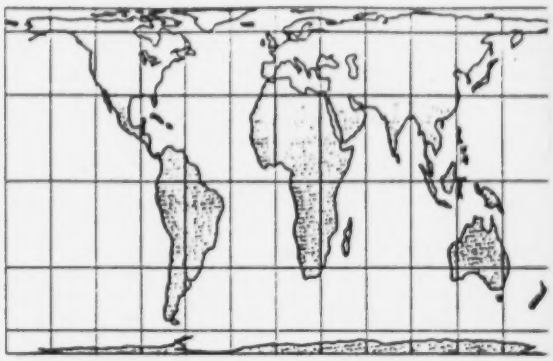
A globe simultaneously shows accurate shapes, sizes, distances, and directions. No single world map can show all four of these properties accurately. Every world map distorts one or more of them. For example, a world map that shows correct shapes cannot show correct sizes, and vice versa.

The projections illustrated here can be classified according to their map properties. *Conformal* projections show true shapes, but distort sizes. (You can remember this term's meaning by associating *shape* with the *form* in *conformal*.) *Equal-area* projections show all areas in their true relative sizes, but distort shapes. *Compromise* projections allow some size distortions in order to portray shapes more accurately.

For all types of world projections, distortion is generally the least near the center of the map and the greatest at its edges.

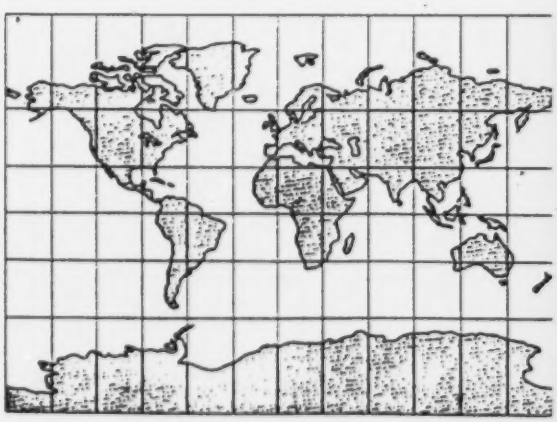


Mercator: First published in 1569, the Mercator is a conformal projection. North and South Poles are shown not as points, but as lines the same length as the Equator. The result is extreme size distortion in the higher latitudes. The Mercator map was designed for navigation, and the true compass direction between any two points can be determined by a straight line.



Gall-Peters: An equal-area projection, the Gall-Peters greatly distorts shapes near the Equator as well as near the poles. Features near the Equator are stretched vertically, while features near the poles are flattened horizontally. The resulting shapes are quite different from those on the globe.

Armadillo: The Armadillo is a compromise projection that is intended to give young students the impression of a map being peeled from a globe. Because its unique appearance results in severe distortions, especially at the map's outer edges, it has seldom been used outside the classroom.



Miller Cylindrical: The Miller is a compromise projection based on the Mercator. Its shapes are not as accurate as those on the Mercator map, but it has much less size distortion in the higher latitudes. The Miller cylindrical projection is frequently used when mapping world time zones.

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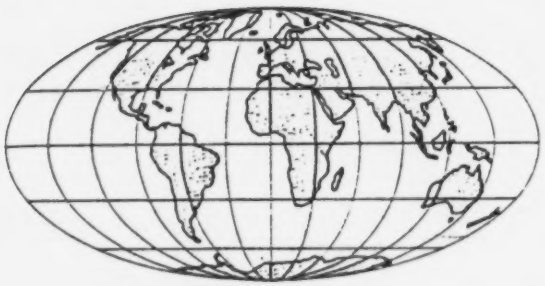
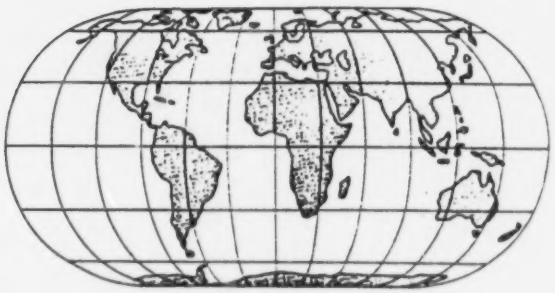


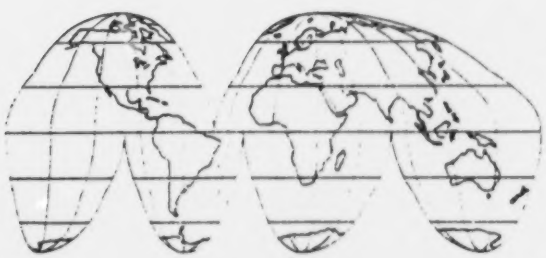
Mollweide: An equal-area projection, the Mollweide has an oval shape that reminds the viewer of a globe. The Mollweide projection is frequently used for world distribution maps. (A distribution map shows the relative location and extent of something—such as crops, livestock, or people—across the face of the earth.)



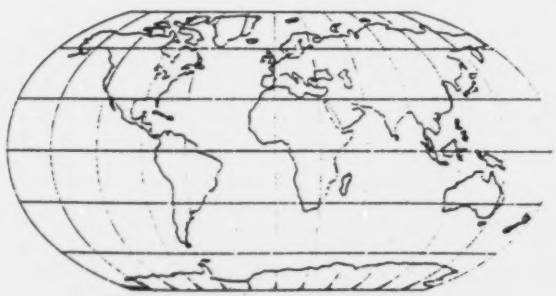
Eckert IV: An equal-area projection, the Eckert IV has relatively minor shape distortions near the Equator and the poles. The result is a map that is well-suited either for general reference or for showing world distributions. It has been used in several atlases to show world climates and other themes.

Van der Grinten: The Van der Grinten is a compromise between the Mercator and the Mollweide. The full projection is shaped like a circle, but the polar areas are normally not shown. Shapes, sizes, and directions are reasonably accurate between 60°N and 60°S, where most of the world's people live. The Van der Grinten has long been used for general reference maps.

Winkel "Tripel": The Winkel "Tripel" is a compromise projection. Its oval shape and curving parallels result in a map with realistic shapes and minor size distortions at all latitudes. The Winkel has less size distortion than the Van der Grinten (at left) and less shape distortion than the Robinson (below).



Goode's Homolosine: Goode's is an equal-area map that also shows shapes extremely well. Shapes can be shown more accurately than on most equal-area maps because the grid is *interrupted* or split in the ocean areas. The interruptions allow land areas to be shown with less stretch or distortion.



Robinson: First used in 1963, the Robinson is a compromise projection. Because it presents a reasonable overall picture of the world, it is often used for maps in educational materials. It looks similar to the Eckert IV, but the Robinson is easily distinguished by its size distortion in the polar areas.

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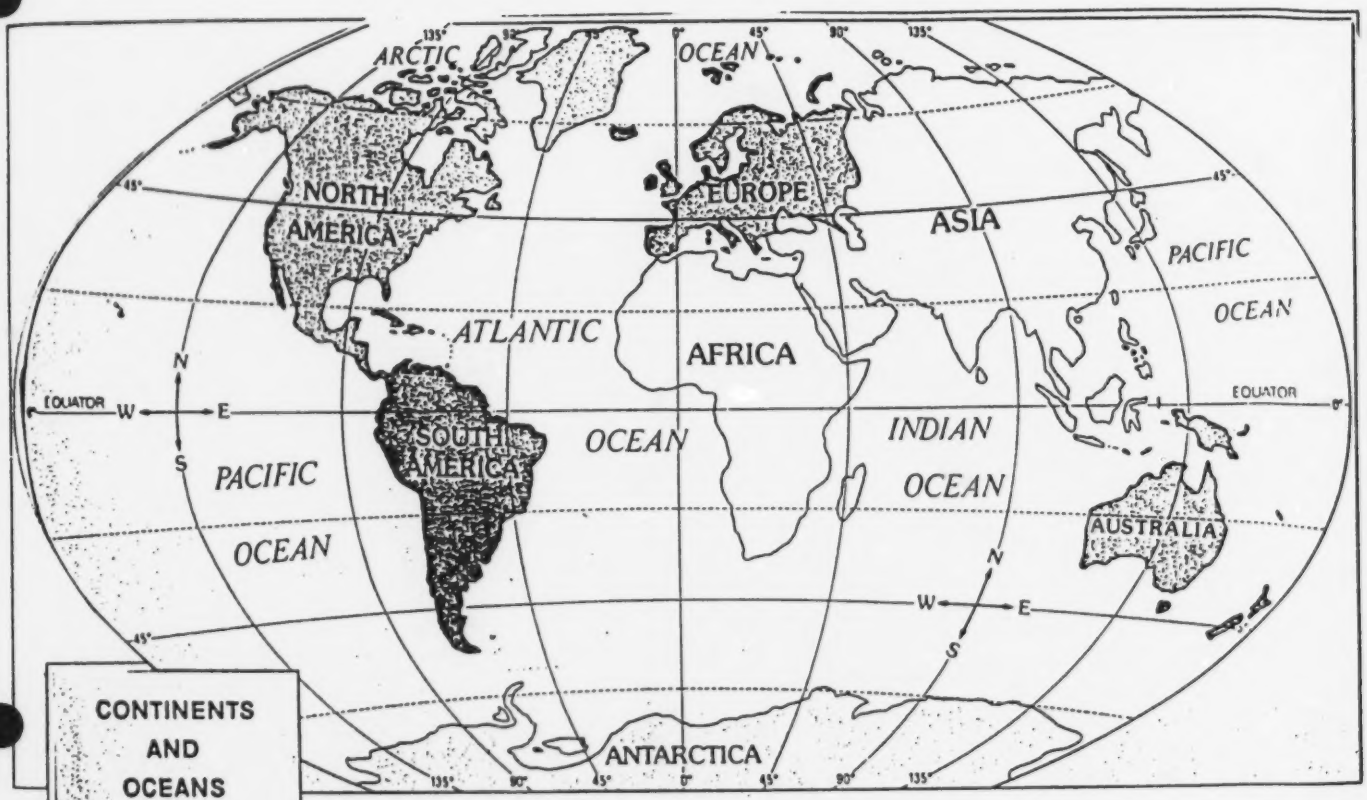
REFERENCE MAP LEGEND, CONTINENTS AND OCEANS



CONTINENTS AND OCEANS

LEGEND FOR PHYSICAL AND POLITICAL REFERENCE MAPS

LAND AND WATER FEATURES

- River
- Canal
- Waterfall
- Lake
- Seasonal or dry lake
- Dam
- Wetlands
- Ice cap
- Mountain peak

LETTERING STYLES

ASIA	Continent
PARAGUAY	Country
Great Plains	Land feature
PACIFIC OCEAN	Water feature
	Water feature
Odessa	City
(U.S.)	Possession

POLITICAL BOUNDARIES

- International boundary
- Internal boundary (state, province, republic)
- Other boundary (disputed or undefined)
- Small country or possession

ELEVATION

Meters	Feet
Over 6000	Over 20,000
3000 to 6000	10,000 to 20,000
1500 to 3000	5,000 to 10,000
600 to 1500	2,000 to 5,000
300 to 600	1,000 to 2,000
150 to 300	500 to 1,000
0 to 150	0 to 500
Below sea level	Below sea level

WATER DEPTH

Less than 200	Less than 600
Greater than 200	Greater than 600

Metric numbers are rounded

CITIES

- Bombay
- Vladivostok
- Mecca

A city's relative size is shown by the size of its symbol and lettering

- Tokyo — National capital
- Hartford — Other capital (state, province, republic)

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Varying Geographical Scales

On a large-scale map, the details of Singapore's internal population density can be shown [Figure 1-2(a)]. On a map drawn to a smaller scale but showing a larger portion of Southeast Asia, the population density of Singapore can be represented only as a single, seemingly homogeneous value [Figure 1-2(b)]. On a map of the entire world (see front endpaper), Singapore virtually disappears, so its population density cannot be portrayed.

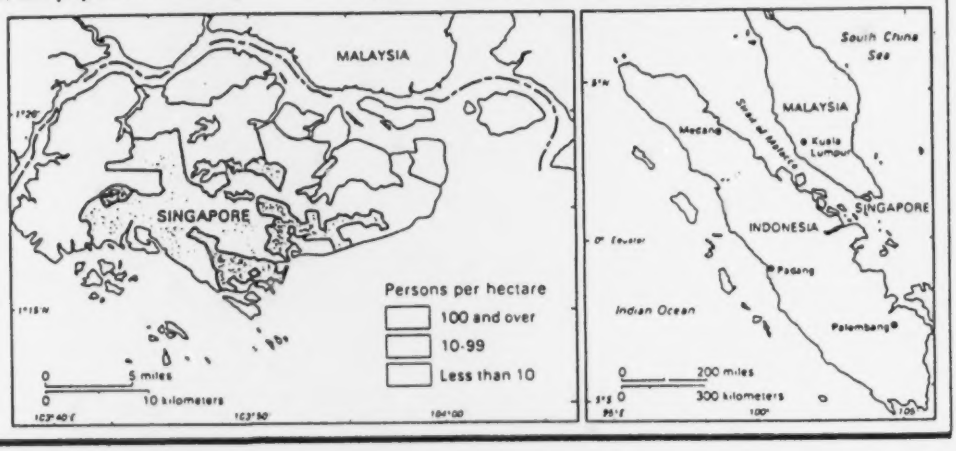


Figure 1-2. Singapore at Contrasting Scales.

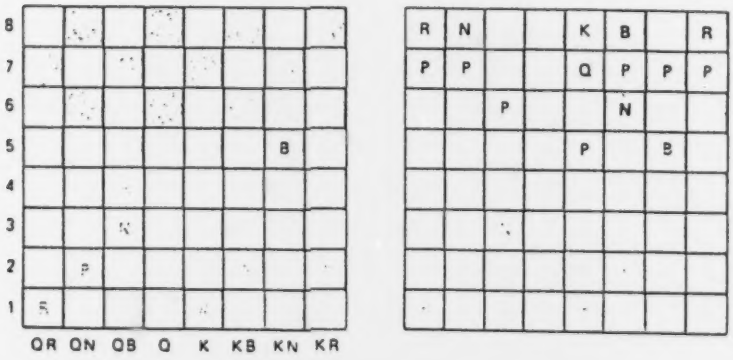


Figure 1-3. The Importance of Position in Chess. (a) The absolute locations of chess pieces can be specified by their rank and file (notations that function like latitude and longitude). (b) These locations are most meaningful, however, in terms of the positions *relative* to the opponent's pieces.

Map scale. The ratio of map distance to the corresponding earth distance. For example, 1:30 means one linear unit (such as an inch or a centimeter) on the map represents 30 of those units on the earth. If a second map has a ratio of 1:3,000,000 then comparatively it has a much *smaller* scale. (See Box 1-1).

Absolute location. A position on the earth that is indicated by a fixed grid (or physical features); for example, the site of Chicago is at 41°49' N, 87°37' W (see Relative location).

Relative location. A position on the earth that is indicated in terms of other phenomena. For example, Chicago is situated where rail, water, and highway routes converge (see Absolute location).

Major Cities of the world

Major Manufacturing Regions

2-5

Distributions

DENSITY

PATTERN

DISPERSION

FIGURE 1-3

Geographers use several key terms in describing the extent or the spread of observed features. The three elements common to all distributions are density, pattern, and dispersion.

Density is overall frequency of occurrence of a phenomenon, the number of items per unit of area.

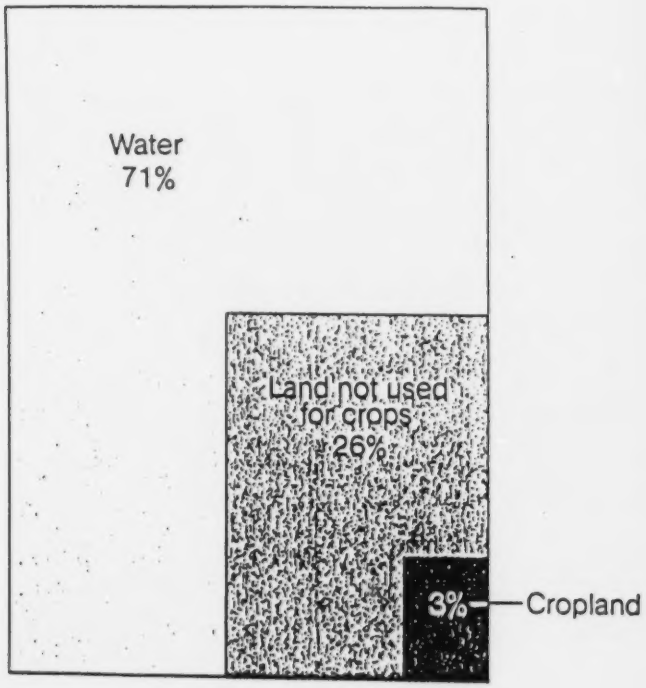
Pattern is the geometric arrangement of the distribution of a phenomenon. Typical words used to describe patterns are *linear, centralized, uniform,* and *random.* Geographers note when the occurrence of a phenomenon forms a pattern, or when two different phenomena occur in the same pattern. The ability to recognize patterns is a learned skill that geographers exercise in common with art historians and others in the visual arts.

Dispersion refers to the extent of the spread of the feature relative to the size of the area being studied.

THE EARTH'S SURFACE

Almost all of the earth's water is in the oceans that surround the seven continents.

Only 3% of the earth's surface can be used for growing crops. Other areas lack the right type of soil, rainfall, or growing season.



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FOCUS

Deductive Geography

These pages have mapped climates around the world and then simplified the map into a generalized model. We can now use that model to guess what the climate might be at any place. This example of reasoning with a model introduces the differences between an **inductive** approach in geography and a **deductive** approach.

One reason we travel is that we think that other places are different from the place where we are. Travel agents entice us to visit far-off places. "Visit exotic Marataria" trumpet their brochures, "and see things you've never seen before!" If you've already been to Marataria, how about a trip to lovely Jusopia, with its unique wonders and attractions? Travel agents emphasize the uniqueness of each place because they want us to buy tickets to each destination one after the other.

Geographers often take a similar view of the world, analyzing the ways in which specific elements of a place combine to give that place an individual character. Regional studies analyze and synthesize the unique attributes of different places. The popular *National Geographic* magazine similarly focuses on the individuality of each place. Geographic studies that gather information about place after place and describe each as unique are called *idiographic* (idio = distinct; graphic = description). Geography has a long history of such accumulation of knowledge about the world through exploration and analysis of discovery. Aristotle is said to have answered his pupil Alexander the Great's questions about world places with the quintessentially inductive answer, "Go and see." Most geographers still do travel and explore whenever they can.

Even the travel agent, however, would have to admit that places do have similarities. If you want to vacation on a tropical beach, you could choose any one of several in the Caribbean. They are similar enough so that you have an idea of what you're choosing when you choose that category of vacation spot. So it is with big cities. Each city does have distinguishing characteristics, but London, Paris, New York, and Caracas also have much in common. If one has traveled a lot or studied many places, one soon begins to see many ways in which places are similar. A traveler begins to form categories, and each place the traveler visits loses just a bit of its individuality in his or her mind in order to become an example of a category. The traveler sees each place's individuality, but also its similarity with other places. An approach to knowledge that seeks general rules is called *nomothetic* (law-establishing). Urban planners look for similarities from city to city in the hope of using one city's experiences to help solve similar problems in another.

The two ways of looking at the world represented by the travel agent and the urban planner represent, respectively, inductive and deductive ways of viewing reality. *Inductive thinking* begins with specific cases and leads up to general conclusions. It proceeds step by step, building up a picture of the world from fact after fact. *Deductive thinking*, on the other hand, starts from general assumptions about reality. It creates models and then compares real-world specimens with those models. If we find that any individual real-world specimen deviates from the attributes of our model, we try to explain that deviation from the model. For example, we can design in our minds a model "big city," and the model big city has certain attributes. One of those attributes is probably traffic jams. If, perhaps, the big city of Melbourne, Australia, does not have traffic jams, we try to explain why. Deduction is a way of describing places' uniqueness by explaining why they are not what you expect them to be.

In some examples of deductive research, geographers imagine the existence of a perfectly flat surface with absolutely no variations on it. This is called an **isotropic plain**. Geographers can then explore through logic alone how things would be distributed on such a surface. Even an isotropic plain would demonstrate the effects of the abstract qualities of distance, direction, and relative position.

To give just one example of deductive thinking, consider the concept of distance. Distance is a powerful factor in our lives. We try to overcome the cost and inconvenience of it. The distribution (the geography) of items in your home kitchen cabinets demonstrates your attempt to overcome the cost of distance. You probably put the items you use most often on the closest, most convenient shelves, and the items you use less often farther away toward the top. Most people do, and I deduce that you do. If your cabinets demonstrate a significant deviation from this expected behavior, I would seek an explanation.

Köppen's model continent is an example of deductive geography. Later in this book we will see how the geographers Johann von Thünen and Walter Christaller used simple deductive notions to build theories of the use of land and of the distribution of cities across a landscape.

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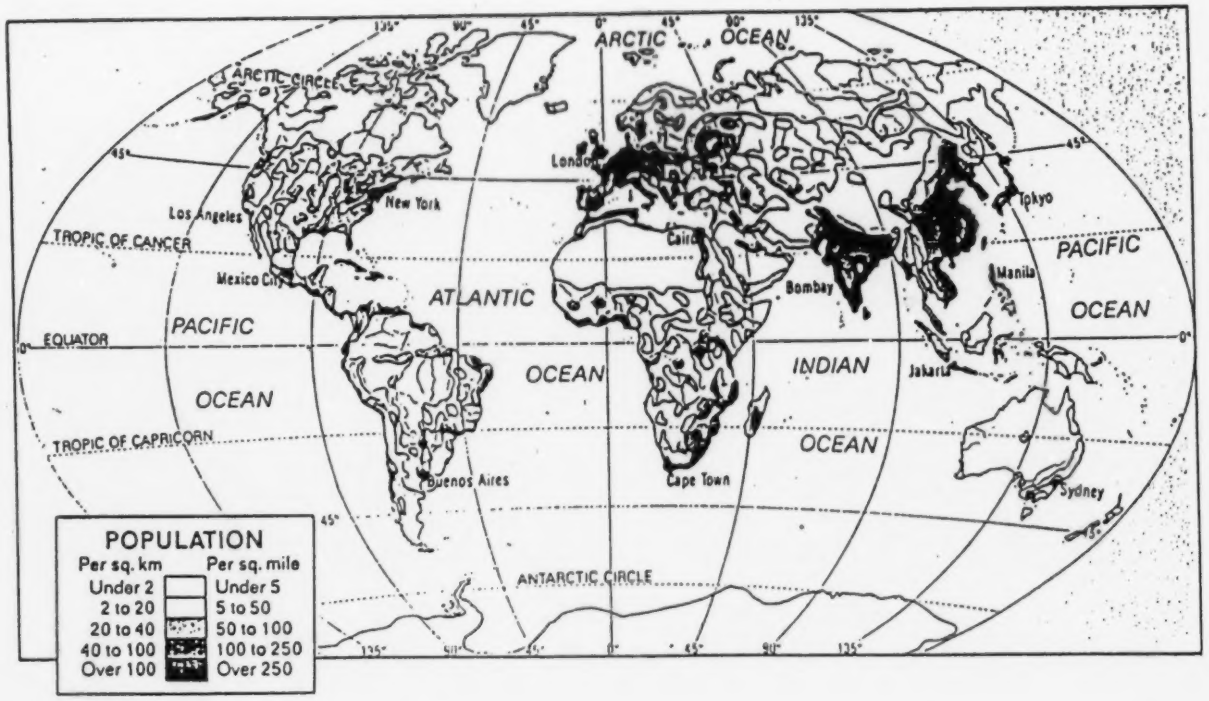

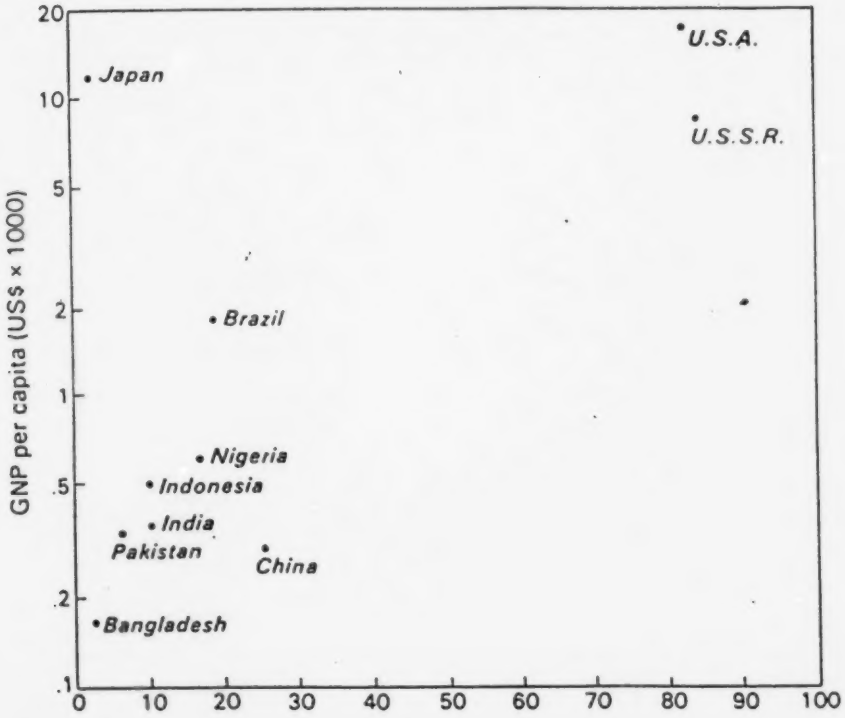

Figure 10-1. Relationship between Wealth and Natural Resources. The values (plotted for the ten most populated countries) represent Gross National Product per capita and an index of natural resources (based on mineral production, coal reserves, petroleum reserves, and arable land per capita). Although the position of the points for the United States and Bangladesh suggests a positive correlation between natural resources and national wealth, the scattering of the other points (especially the one for Japan) indicates the relationship is weak among these major countries.

Plantation Agriculture

Many tropical and subtropical crops are grown on plantations. Plantations are large-scale production units that specialize in the growing of a few crops over extensive areas and selling to large markets. To be successful, plantations have to have cheap land, cheap labor, and access to mass markets. Production is usually concentrated on one crop such as rubber, sugar, palm oil, cotton, bananas, coffee, tea, cacao, or sisal. Partial processing, such as the crushing of sugar cane to produce molasses, is often done at a factory on the plantation. Thus, this form of agriculture also has an industrial component.

North American and Western European companies have developed many plantations in less developed lands. In the past, the Dutch, British, and French all developed sugar plantations on Caribbean islands. Land was taken over, slaves were imported from Africa, and sugar was harvested and processed into molasses, refined sugar, or rum for European markets. In Southeast Asia, the owners and managers of rubber plantations acquired large tracts of land, brought in cheap labor from India and China, and successfully competed with other rubber producers of the world. In Central America, much land was planted to bananas by large American companies.

Plantations are a mix of modern and medieval features. Modernity is reflected in mechanization, capitalization, and long-range marketing. On the other hand, the class system of the plantation is pre-modern. At the top of the social structure are the owners and managers. The bulk of the plantation population, however, is made up of lowly paid laborers (formerly slaves or indentured workers) who live in poor conditions.

Plantations were one of the earlier international institutions that affected people in widely separated places. They helped to establish communication and marketing links between dissimilar parts of the world, which facilitated the flow of cultural and political influences. For people living in wealthier importing countries, plantations provided the crops that could not be economically produced locally. For people in the poor plantation countries, land was taken over, foreign ethnic groups were brought in, and local economies were distorted.

What's in a Name?

What names can be applied appropriately to the two groups of countries that are highest and lowest on the scale of economic development? In the past, the two extremes were called *developed* and *underdeveloped*, but those terms implied absolute positions rather than comparisons along some continuum of development. The expressions *haves* and *have-nots* suffer from the same weakness. The word *developing* has been used as a replacement for *underdeveloped*, but this terminology only treats one end of the spectrum. The designations used here—*less developed* and *more developed*—represent one of the more common pairs.

Other names have arisen from political relations. Since World War II, the antagonism between the United States with its close allies and the Soviet Union with its affiliated countries has divided most of the world into two blocs (i.e., two "worlds"). The remaining countries, having less political and military power, were called *Third World* countries. In more recent times, the economic differences among nations within the Third World group has led to the addition of the term *Fourth World*. Mixing political alignments with economic conditions, however, causes difficulties in classifying countries that may have the characteristics of two categories (that is, be closely allied with one of the major power blocs but yet be economically poor).

Alternative terms have differentiated between *industrial* and *nonindustrial* countries, but these titles are misleading when countries are industrially important yet economically poor (e.g. China and India) or are rich but not industrial (e.g., Oman and Brunei). Likewise, referring to *North* and *South* countries is confusing because Australia and New Zealand are included in the "north" class, whereas Mongolia and North Korea are considered a part of the "south" group. Similar locational misinterpretations result when *core* and *periphery* are applied because Australia and Japan are far from "the core," whereas Morocco and Albania are close to it. Names that describe the type of economic system as well as wealth (i.e., *technically advanced market economies*, *less developed market economies*, and *centrally controlled economies*) are useful, but these are somewhat awkward when mentioned repeatedly in a discussion.

Reference to a specific set of countries (e.g., those in "the Group 77" of the United Nations or the 24 countries in the Organization for Economic Cooperation and Development) is meaningful, but there is no worldwide system that forms inclusive or mutually exclusive groups.

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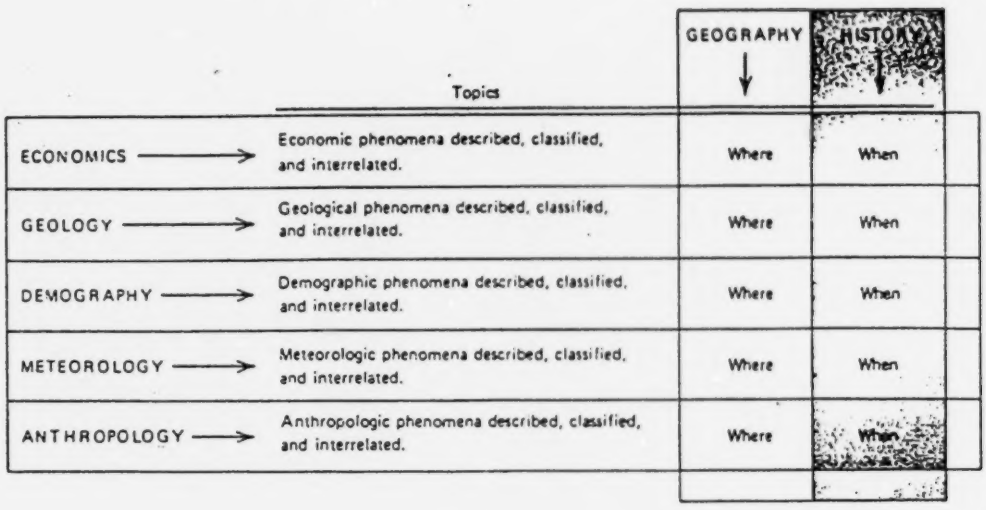

Figure 1-1. The Spatial Viewpoint of Geography. Geography is concerned with where economic, geologic, demographic, meteorologic, and anthropologic elements (as well as others not represented here) are located, why they are located there, and how those locations are interrelated.

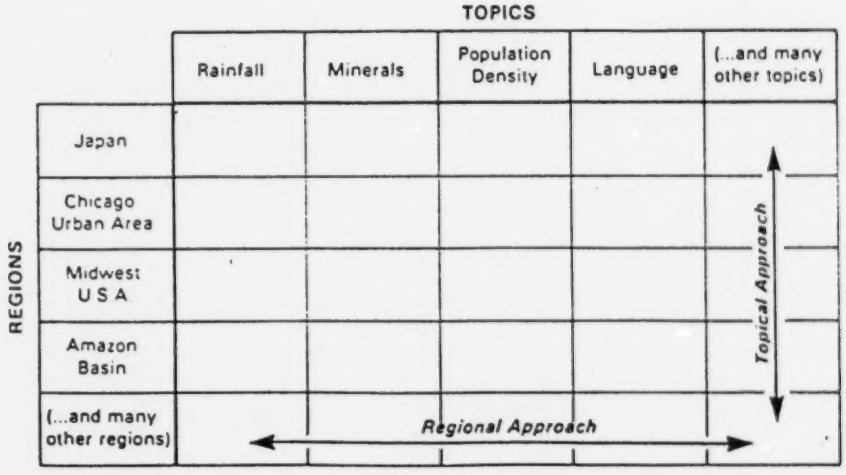

Figure 1-7. Regional and Topical Approaches to Geography. (See text for further explanation.)

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MODULE 3 - NORTH ATLANTIC REGION

Objectives:

1. To provide the class with a wide geographic perspective of Europe.
2. To identify and locate the major ports in the region.
3. To distinguish major physical features of the region.
4. To familiarize the students with the role of international trade associations.
5. To increase the students' knowledge of European trade and transport.
6. To distinguish the unique geographic variables which dictate the trade relationships and patterns of an industrialized region.

Procedures:

1. The lecture will cover the topics and objectives above.
2. Students will be expected to participate to the extent of their knowledge.
3. Paper maps, handouts and transparencies will be used as visual aids.
4. Students will use their texts as a personal reference source.

NORTH ATLANTIC REGION

UNITED KINGDOM: (England, Wales, Scotland and Northern Ireland)

Population: 58 million
Capital: London
Major Rivers: Severn, Thames
Major Ports (city rank):
London (1), Glasgow (3), Liverpool (5), Southhampton, Belfast and Cardiff.
Manufacturing and Trade:
Industries include metals, metal-using manufacturing (50% of exports). Belfast in Northern Ireland concentrates largely on shipbuilding (tankers), textiles, electronics, synthetics and livestock.
Resources:
Oil and gas fields off the northern coast, and coal deposits.
Imports:
Import nearly all of their cotton, wool, rubber, sulphur and 50% of their food and iron ore. Most of these raw materials are refined and exported as finished products. Valued at $210 billion (1992). EU-52%, U.S.-13%.
Exports:
Major exports include machinery, chemicals, textiles, autos, locomotives, ships, aircraft and other iron goods. Valued at $190 billion (1992). EU-52%, U.S.-10%.

FRANCE:

Population: 58 million
Capital: Paris
Major Rivers: Rhone, Seine, Loire, Garrone
Major Ports (city rank):
Marseille (2), Le Havre, Nantes (7), Bordeaux (8), Rouen.
Manufacturing and Trade:
Steel industries, textiles, aircraft, electronics.
Resources:
Bauxite, coal, iron, forests, arable land, tourism.
Imports:
Valued at $239 billion (1992). EU-15%.
Exports:
Valued at $235 billion(1992). EU-50%, U.S.-6%. Steel products, textiles, wine, perfume, electronics, grain, rice, fruit/vegetables, (largest food producer and exporter in Western Europe).

SPAIN:

Population: 39 million
Capital: Madrid
Major Rivers: Tajus, Duero, Ero
Major Ports (city rank):
Barcelona (2), Bilbao, Valencia (3), Cartagena, Gibon
Manufacturing and Trade:
Machinery, steel industries, textiles, footwear, autos, processed food, cork.
Resources:
Agricultural land (grain, olives, grapes, citrus fruits, vegetables), Minerals (uranium, lead iron, copper, zinc, coal), Forests (cork).
Imports:
Accounted for $99.7 billion (1992). EU-51%, U.S.-8%.
Exports:
Valued at $64.3 billion (1992). EU-71%, U.S.-6%. Major exports are foods, textiles, steel products, and cork.

PORTUGAL:

Population: 10.5 million
Capital: Lisbon
Major Rivers: Tajus
Major Ports (city rank):
Lisbon (1), Setubal, Leixoes, Porto.
Manufacturing and Trade:
Footwear, textiles, cork, chemicals, canned fish, wine and paper.
Resources:
Agricultural crops (olives, fruits, grains, potatoes, rice), Minerals (tungsten, uranium, copper, iron), Forests (cork).
Imports:
$30 billion in 1992. Ger.-12%, Fra.-11%, UK-8%.
Exports:
Valued at $18.2 billion (1992). UK-15%, Ger.-13%, Fra.-13%. World leader in cork production and export.

GERMANY: (East and West Germany reunited in October of 1990)

Population: 81 million
Capital: Berlin
Major Rivers: Elbe, Weser, Ems, Rhine and main.
Major Ports (city rank):

Hamburg (2), Bremen, Bremerhaven, Lubeck.

Manufacturing and Trade:

Steel, ship-building, vehicles, machinery, electronics, coal, chemicals.

Resources:

Agriculture (grain, potatoes, beets), Minerals (coal, potash, lignite, iron, uranium).

Imports:

Valued at $402 billion in 1992. EU-52%, other European nations-16%.

Exports:

Valued at $422 billion in 1992. EU-55%, other European nations-19%.

NETHERLANDS:

Population: 15.4 million

Capital: Amsterdam

Major Ports (city rank):

Rotterdam (2), Amsterdam (1) and Ijmuiden.

Manufacturing and Trade:

Metals, machinery, chemicals, oil refining, diamond cutting, electronics.

Resources:

Agriculture (grain, flowers), natural gas/oil, livestock, fisheries and tourism.

Imports:

Valued at $156 billion in 1992. Ger.-26%, Bel.-14%, U.S.-9%, UK-9%.

Exports:

Valued at $160 billion in 1992. Ger.-26%, Bel.-14%, U.S.-9%, UK-9%.

BELGIUM:

Population: 10 million

Capital: Brussels

Major Rivers: Scheldt and Meuse.

Major Ports (city rank):

Antwerp (2), Zeebrugge, Ghent (3).

Manufacturing and Trade:

Steel, glassware, jewelry, textiles, chemicals.

Resources:

Arable land, coal, forests, tourism.

Imports:

Valued at $120 billion in 1992. EU-73%.

Exports:

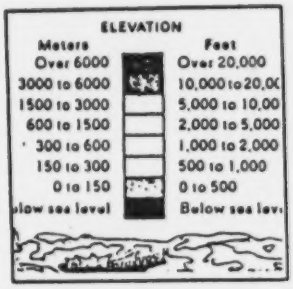
Valued at $118 billion in 1992. EU-74%.

IN THIS ATLAS...

Nystrom's *World Atlas* includes both physical and political reference maps, which provide general information on major regions, as well as a variety of special maps. Each has its own map legend or key. The atlas also includes graphs, photographs, and drawings. At the end of the book, an index describes places named on the maps and tells where they are located.

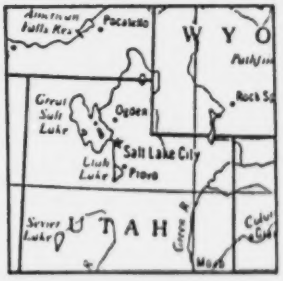
PHYSICAL MAPS

Physical reference maps in the atlas use color to show land elevations and water depths. They name many landforms and bodies of water, and also countries and selected cities. Areas that are not part of the map's subject are shown in a neutral color.



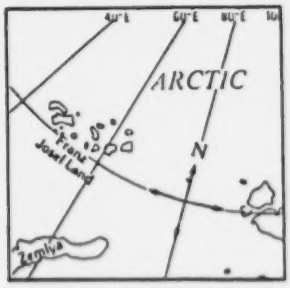
ELEVATION COLORS

For each physical map there is a short legend that includes a key to the map's colors. Elevations and depths are given in both meters and feet. The complete legend for all the reference maps is on page 5.



POLITICAL MAPS

Political reference maps in the atlas use color to show where one country or state ends and another begins. They name many more cities than physical maps and also name rivers, lakes, and major water bodies. Nonsubject areas have a neutral color.

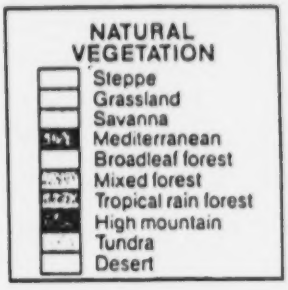


DIRECTION ARROWS AND MAP GRID

All reference maps in the atlas have compass arrows that point in the cardinal directions. True north, south, east, or west are always found by following the map's grid lines. The latitude or longitude of each line in the map grid is identified.

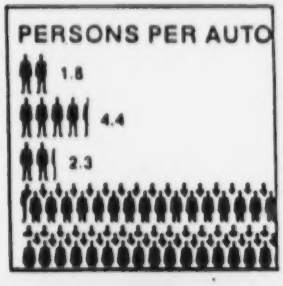
SPECIAL MAPS

In addition to the reference maps, the atlas has various special maps of the world's regions. These are often called thematic maps because each focuses on a single subject, or theme.



SPECIAL MAP KEYS

Every special map has a key to explain its symbols, which in most cases are colors. The same colors can stand for population densities on one map, growing seasons on a second map, and land uses on a third. That is why it is important to read the key before using the map.



GRAPHS

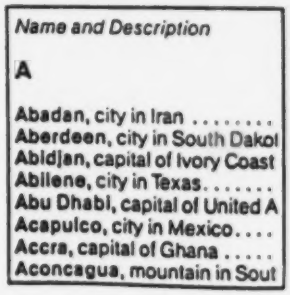
The atlas includes circle graphs, bar graphs, line graphs, and pictographs. Graphs summarize complex facts in a visual way, making it easier to see similarities and differences among countries of the world.

PROJECTIONS

Map projections are the means by which the curved surface of a globe is transferred to the flat surface of a map. Several different projections are used in the atlas. Some of the infinite number of possible projections are explained on pages 84 and 85.

PHOTOGRAPHS AND DRAWINGS

The numerous photographs in the atlas help show the characteristics of places around the world. Special drawings are used to illustrate things that are difficult to see in a photograph or map.


Name and Description
A
Abadan, city in Iran .....
Aberdeen, city in South Dakot
Abidjan, capital of Ivory Coast
Abilene, city in Texas.....
Abu Dhabi, capital of United A
Acapulco, city in Mexico....
Accra, capital of Ghana .....
Aconcagua, mountain in Sout

INDEX

The index lists many of the places that are named on various maps in the atlas. Each place is briefly described. A page number and latitude-longitude location tell where it can be found.

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ARCTIC
ICELAND
ARCTIC CIRCLE
PRIME MERIDIAN
NORWEGIAN SEA
ATLANTIC OCEAN
NORTH SEA
Celtic Sea
IRELAND
UNITED KINGDOM
Bay of Biscay
FRANCE
SPAIN
PORTUGAL
GERMANY
POLAND
CZECH REPUBLIC
SLOVAKIA
AUSTRIA
HUNGARY
SWITZERLAND
BELGIUM
NETHERLANDS
DENMARK
SWEDEN
Baltic
Balearic Sea
MEDITERRANEAN
Tyrrhenian Sea
Adriatic Sea
Ionian Sea
ITALY
VATICAN CITY
SAN MARINO
MONACO
ANDORRA
SLOVENIA
CROATIA
BOSNIA
YUGOSLAVIA
ALBANIA
MALTA
TUNISIA
ALGERIA
MOROCCO
WESTERN SAHARA
AFRICA
Reykjavik
Amsterdam
The Hague
Rotterdam
Hamburg
Berlin
Copenhagen
Gdansk
Warsaw
Prague
Krakow
Wroclaw
Leipzig
Frankfurt
Essen
Cologne
Brussels
Luxembourg
Paris
Munich
Stuttgart
Vienna
Budapest
Milan
Turin
Genoa
Venice
Rome
Naples
Bari
Palermo
Messina
Sicily
Sardinia
Corsica
Marseille
Lyon
Toulouse
Bordeaux
Nantes
Orleans
Limoges
Geneva
Bern
Zurich
Basel
Lille
Le Havre
Dover
Calais
Southampton
London
Birmingham
Liverpool
Leeds
Glasgow
Edinburgh
Belfast
Dublin
Cork
Aberdeen
Stavanger
Bergen
Trondheim
Oslo
Gothenburg
Malmo
Copenhagen
Lisbon
Porto
Coruna
Bilbao
Zaragoza
Madrid
Barcelona
Valencia
Seville
Malaga
Gibraltar
Rabat
Algiers
Tunis
Palma
Ibiza
Corfu
Split
Sarajevo
Belgrade
Zagreb
Ljubljana
Trieste
Venice
Milan
Turin
Genoa
Nice
Monaco

World Roads and Highways

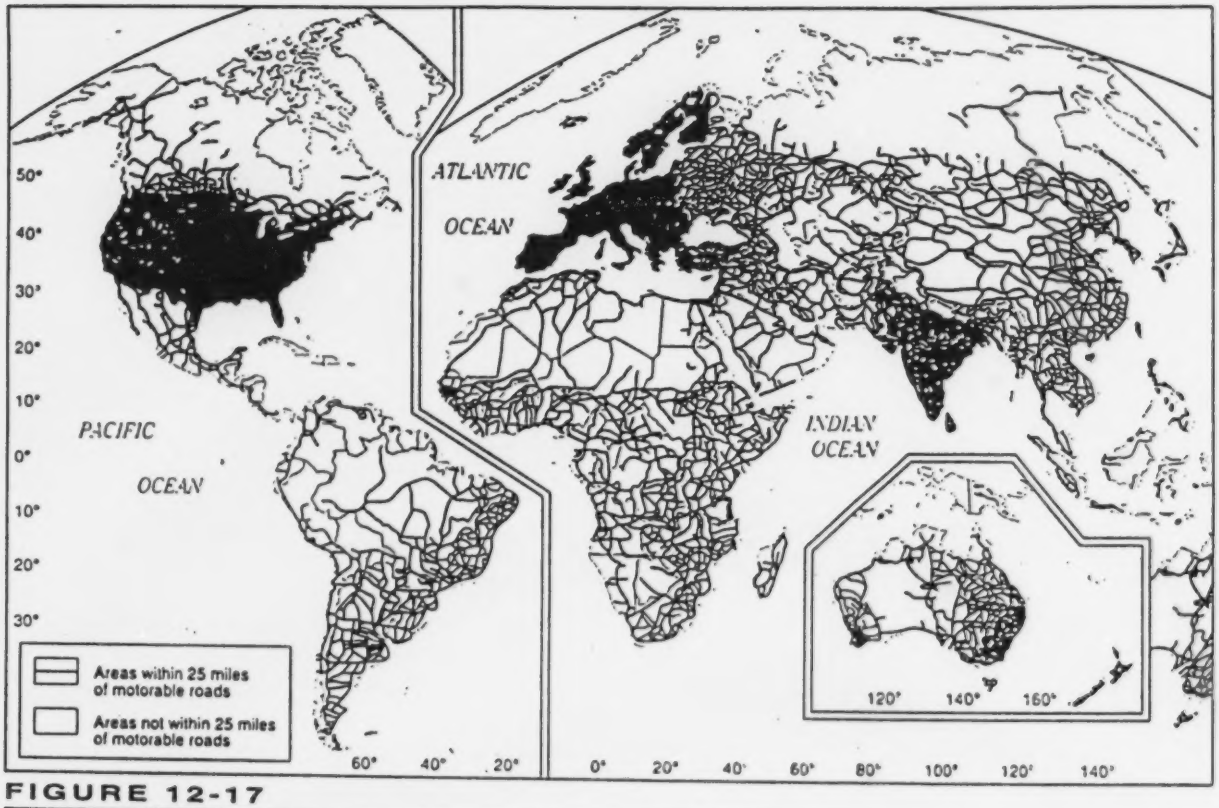

FIGURE 12-17

Compare this map with the world population distribution shown in Figure 4-1. Many densely settled regions, such as Eastern China, would benefit from improved road networks. (Adapted from Rand McNally, *Goode's World Atlas*, 18th edition. 1990 by Rand McNally R.L. 92-5-76.)

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RHINE RIVER

The Rhine River is the most important inland waterway in Western Europe. Several smaller rivers flow into the Rhine, and other rivers are connected to it by canals. These rivers form a network that provides water and cheap transportation for industry. The Rhine is the busiest river in the network.

International Trade

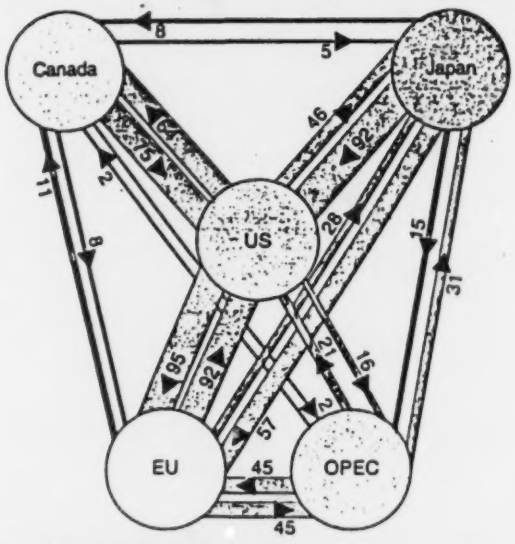
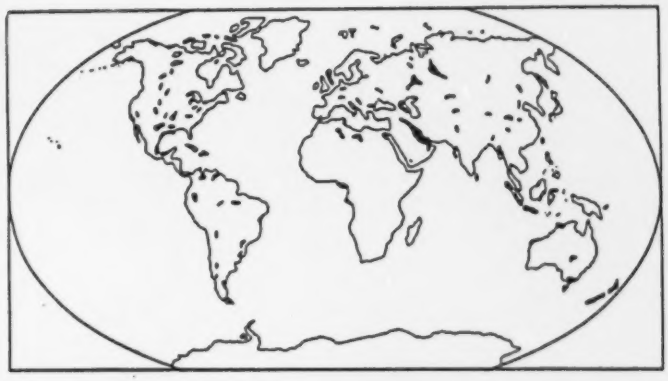


FIGURE 12-24

International trade among selected countries or blocs, in billions of dollars. (Data from *UNCTAD Handbook of International Trade and Development Statistics, 1992.*)

Major Energy Producers



OIL (Petroleum)

Major producing region

Russia

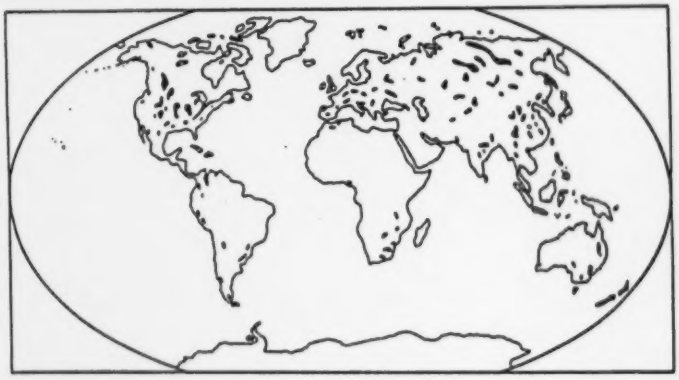
United States

Saudi Arabia

China

Relative Production

All other countries



COAL

Major producing region

China

United States

Germany

Russia

Relative Production

All other countries

Production and Consumption of Natural Resources

BAUXITE

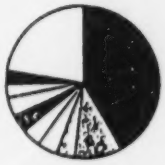
Reserves

Guinea 26%
Australia 20%
Brazil 13%
Jamaica 9%
India 5%
Guyana 3%
Greece 3%
Suriname 3%

Production

Australia 36%
Guinea 16%
Brazil 9%
Jamaica 8%
USSR 5%
Suriname 3%
China 3%
Yugoslavia 3%
India 3%
Hungary 3%

Aluminum production



Australia 29%
U.S. 13%
USSR 10%
Suriname 4%
Jamaica 4%
China 4%
Venezuela 4%
Brazil 4%
India 3%
W. Germ. 3%

Aluminum consumption

U.S. 26%
Japan 12%
USSR 10%
W. Germ. 7%
France 4%
China 3%
Italy 3%
U.K. 2%
Canada 2%
India 2%

COPPER

Reserves

Chile 25%
U.S. 17%
USSR 11%
Zaire 8%
Australia 5%
Zambia 5%
Canada 4%
Philippines 3%
Poland 3%
Peru 2%

Production

Chile 17%
U.S. 17%
Canada 8%
USSR 8%
China 5%
Poland 5%
Zambia 5%
Zaire 4%
Peru 4%
Australia 3%

Refinery capacity

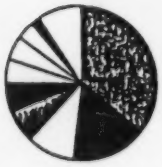
U.S. 20%
Chile 10%
Japan 10%
USSR 9%
Zambia 5%
Canada 5%
Belgium 4%
China 4%
Poland 3%
W. Germ. 3%

Consumption

U.S. 21%
Japan 12%
USSR 12%
W. Germ. 7%
China 4%
Italy 4%
France 4%
U.K. 3%
Belgium 3%
So. Korea 2%

IRON ORE

Reserves



USSR 36%
Australia 16%
Brazil 10%
Canada 7%
U.S. 6%
China 5%
India 5%
So. Africa 4%
Sweden 2%

Production

USSR 26%
Brazil 17%
Australia 12%
China 11%
U.S. 6%
India 5%
Canada 4%
So. Africa 4%
Sweden 2%

Crude steel production

USSR 21%
Japan 14%
U.S. 12%
China 8%
W. Germ. 5%
Brazil 3%
Italy 3%
France 2%
So. Korea 2%
Poland 2%

Crude steel consumption

USSR 22%
U.S. 14%
China 11%
Japan 10%
W. Germ. 4%
Italy 3%
Poland 2%
India 2%
So. Korea 2%
U.K. 2%

TIN

Reserves

China 25%
Brazil 20%
Malaysia 19%
Indonesia 11%
USSR 5%
Thailand 5%
Australia 3%
Bolivia 2%

Production

Brazil 24%
Malaysia 14%
China 13%
Indonesia 13%
USSR 8%
Bolivia 7%
Thailand 6%
Australia 4%

Smelting capacity

Malaysia 31%
Brazil 13%
Thailand 11%
China 9%
Indonesia 8%
USSR 5%
Bolivia 4%
Spain 4%
U.S. 2%
Mexico 2%

Consumption

U.S. 16%
Japan 14%
USSR 13%
W. Germ. 8%
China 6%
U.K. 4%
France 3%
So. Korea 3%
Brazil 3%
Italy 3%

Australia
Belgium
Bolivia
Brazil
Canada
Chile
China
France
Greece
Guinea
Guyana
Hungary
India
Indonesia
Italy
Jamaica
Japan
Malaysia
Mexico
Peru
Philippines
Poland
South Africa
South Korea
Spain
Suriname
Sweden
Thailand
United Kingdom
United States
USSR
Venezuela
West Germany
Yugoslavia
Zambia
Zaire

3-5

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The World's Major Fisheries

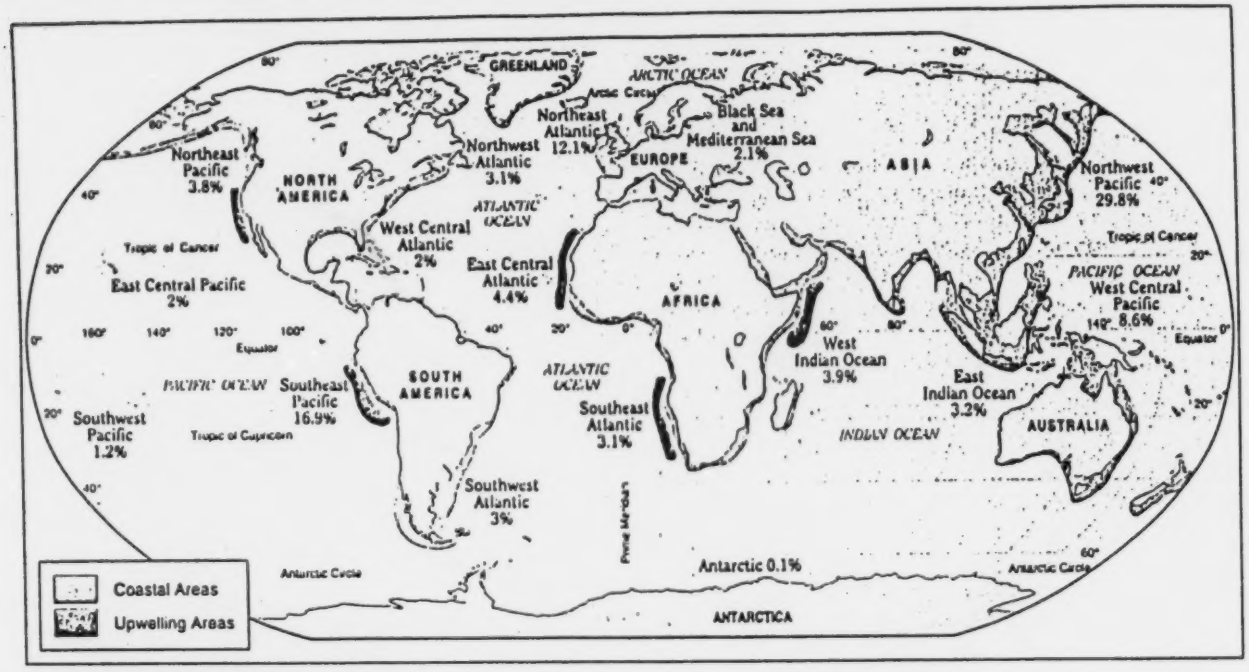


FIGURE 6-27

The figure shows the percentage of total world yield from each fishery. Many of the world's major fisheries are currently fished to their maximum sustainable yield. (Courtesy of the United Nations Food and Agriculture Organization.)

Origins of the World's Foods and Livestock

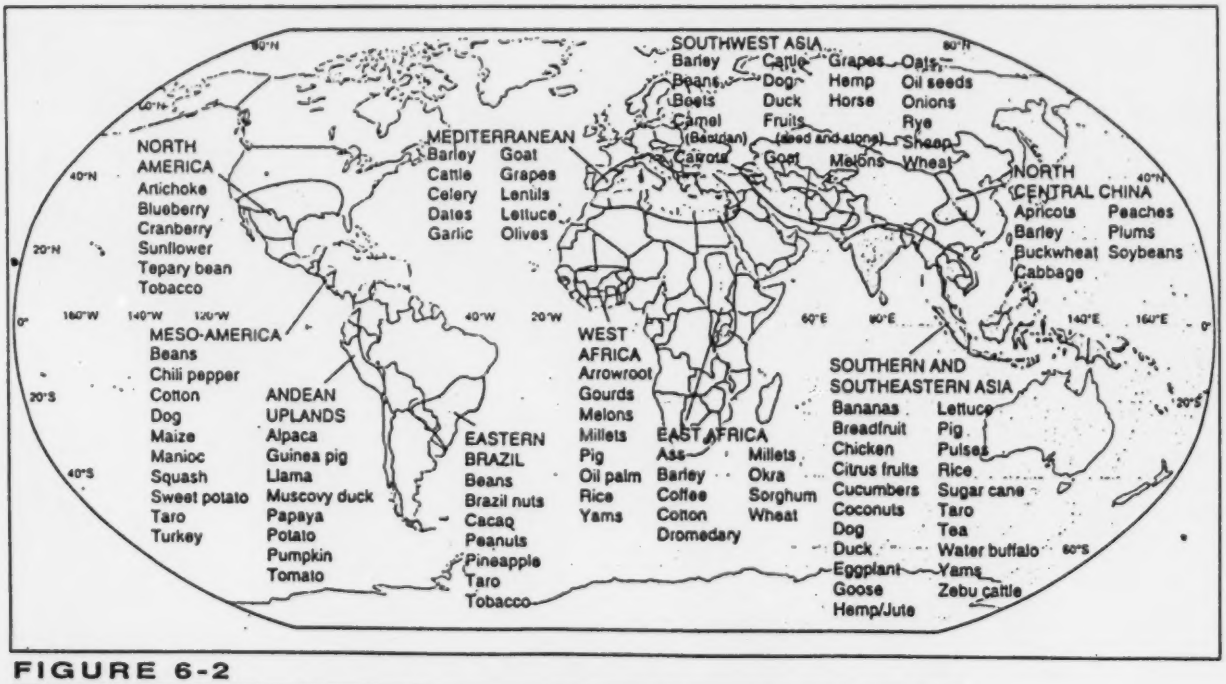


FIGURE 6-2

This map shows the origins of the world's food crops and domesticated animals. It is a tribute to human ingenuity that the people in so many different regions and biomes devised diets and lifestyles by learning to exploit the different plants and animals they found locally. Many of these plants and animals, however, have been widely redistributed, so the area that leads production today is not necessarily where that plant or animal was first domesticated.

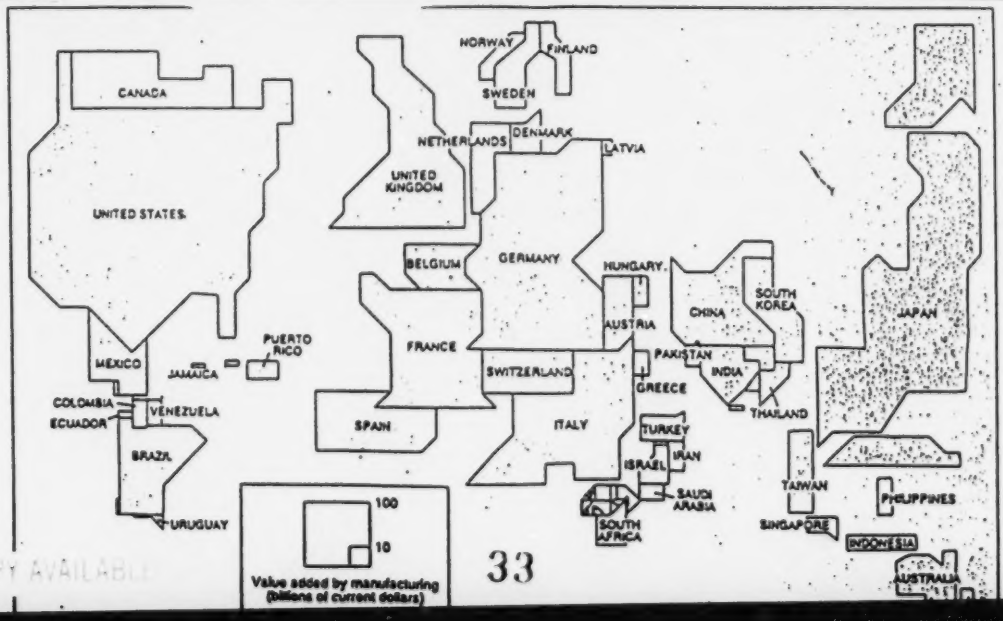
3-6

Export and Import of Wheat, Rice and Corn

Exporters	(Millions of dollars)	Importers	(Millions of dollars)
Wheat			
United States	3,887	Soviet Union	2,490
France	3,296	China, Mainland	2,319
Canada	2,863	Italy	1,217
Australia	1,971	Japan	1,019
Argentina	871	Egypt	965
United Kingdom	760	Iran	707
West Germany	503	Netherlands	595
Netherlands	406	West Germany	429
Denmark	229	Algeria	422
Saudi Arabia	211	South Korea	419
Rice			
Thailand	1,086	Saudi Arabia	226
United States	804	Iran	216
Vietnam	375	France	216
Italy	357	United Kingdom	209
India	246	West Germany	165
Pakistan	242	Hong Kong	150
Belgium-Luxembourg	168	Brazil	147
Spain	108	Philippines	128
Uruguay	104	Iraq	124
China, Mainland	98	United Arab Emirates	120
Corn			
United States	6,206	Japan	2,295
France	1,854	Soviet Union	1,690
China, Mainland	404	South Korea	837
Argentina	329	China, Mainland	750
South Africa	176	Netherlands	538
Thailand	162	Mexico	473
Zimbabwe	87	United Kingdom	396
West Germany	71	West Germany	375
Hungary	51	Italy	363
Spain	41	Spain	307

Source: *Statistical Abstract of the United States*, 1993–1994, #1476–1419, p. 867.

Value Added by Manufacturing, 1990



This cartogram indicates the value added by manufacturing in each country. These statistics are difficult to gather so several countries do not have reliable figures. (Source: World Bank.)

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MODULE 4 - SOUTH AMERICA

Objectives:

1. To provide the students with an encompassing geographic view of the region.
2. To distinguish the major physical features of the continent.
3. To familiarize the students with the extent of the infrastructure in the region.
4. To examine the location of the continent's major ports and trade areas.
5. To familiarize the class with the natural resources of the continent.

Procedures:

1. Lecture will include a discussion relating to the objectives above.
2. Paper maps and transparencies will be used in order to complement the lecture.
3. Classroom handouts will also be provided for the students.
4. Students will use their texts in order to add to the discussion.

SOUTH AMERICA

Most of the major ports for the Central American nations are in their capitals, and they export relatively small quantities, so we will not discuss them much. The nations in South America that we will be discussing are **Argentina, Bolivia, Brazil, Chile, Columbia, Ecuador, French Guiana, Guyana, Paraguay, Peru, Suriname, Uruguay, Venezuela and Panama.** South America is a very diverse continent with respect to geographic elements.

One unifying element is the concentration of development along the coasts. Population centers, industry, transportation are generally located along the coasts. One example is Brazil, where the capital was moved inland with the specific intent of increasing development within this region. This move has brought a variety of environmental, political and social problems.

The continent as a whole is relatively resource rich, but the inability to add refined value to these resources leaves the nations economically poor. All of the continent's nations are considered Third World countries.

The continent contains two landlocked nations, Bolivia and Paraguay. However, both countries have access to ports and the major oceans by means of navigable rivers.

The lack of infrastructure, particularly in the interior of the continent, leads to the dependence on rivers for transport and travel. There are still large, unexplored regions throughout the continent.

The varying and challenging terrain is partially responsible for the lack of a sound infrastructure, as is the weak economic standing of these nations.

The physical landscape is the defining feature of this continent. Extensive coastlines, numerous rivers (usually navigable), and dynamic topography all impact the trade routes and regions of development.

South America's resources include petroleum, natural gas, foods, wood, fish and minerals. Upwellings along the western coast aid the fish harvest.

Timber harvests are increasing. Harvesting practices are generally aimed at clearing land for agriculture and not for lumber production. Much of the possible value of the wood is lost, as it is exported in roundwood (log) form.

The Panama Canal will come under the jurisdiction of Panama in 2000. Currently it is under U.S. supervision. A plan to restructure the canal so that it can accommodate larger ships and more traffic is in progress. The Panama Canal is a very important seaway, just as the Suez Canal is in the Middle East. It is expensive to travel through and limited in the cargoes it can allow.

SOUTH AMERICA

ARGENTINA:

Capital: Buenos Aires (Plans to move capital to the Patagonia region)
Exports: Processed foods, beef, minerals (U.S. 12%)
Imports: (U.S. 21%)
Ports: Buenos Aires, Bahia Blanca, La Plata
Water: Rio dela Plata, Parana River, Uruguay River
Features: Boasts highest peak in the Western hemisphere, highest and lowest points in S. America, Andes in west, wooded plains in north (Gran Chaco), pampas, arid in south

BOLIVIA:

Capital: Sucre (La Paz is the administrative capital)
Exports: Natural gas, sugar, coffee, coca, textiles (U.S. 19%)
Imports: (U.S. 20%, Brazil 20%)
Ports: None (One of two landlocked nations on the continent)
Water: Lake Titicaca, Amazon River tributaries, Parana River tributaries
Features: Relies on RR, aircraft, rivers, roads for transport

BRAZIL:

Capital: Brasilia (moved from Rio to develop Amazon region)
Exports: Coffee, world's largest grower (U.S. 26%, EU 27%)
Imports: (U.S. 21%, EU 23%)
Ports: Santos, Rio de Janeiro, Vitoria, Salvador, Rio Grande
Water: Atlantic Ocean, 15,000+ navigable miles of river (2,000+ Amazon)
Features: Concentration of development in the south east (80% of industry)

CHILE:

Capital: Santiago
Exports: Copper (50%), iodine (50% of world), wood, fish
(U.S. 18%, EU 34%)
Imports: (U.S. 19%, EU 23%)
Ports: Valparaiso, Arica, Antofagasta
Water: Pacific Ocean (2,650 mile coastline) miles of river (2,000+ Amazon)
Features: Andes mountains, very narrow country (100-250 miles wide)

COLUMBIA:

Capital: Bogota
Exports: Coffee (50%), emeralds (world leader, 90%) (U.S. 40%)

Imports: (U.S. 36%)
Ports: Buena Ventura, Santa Marta, Cartagena
Water: Pacific Ocean, Caribbean Sea, Orinoco River, Amazon River, Magdelena river
Features:Magdelena River flows north, "outlets" to the west, east and north

ECUADOR:

Capital: Quito
Exports: Bananas (world leader), coffee (U.S. 60%)
Imports: (U.S. 34%)
Ports: Guayaquil, Manta, Esmeraldas, Puerto Bolivar
Water: Pacific Ocean
Features: Split by the Andes into several climatic zones

FRENCH GUIANA:

Capital: Cayenne
Exports: Gold, shrimp, timber, machinery (U.S., EU)
Imports: (U.S., EU)
Ports: Cayenne, Kourou
Water: Atlantic Ocean
Features: French holding

GUYANA:

Capital: Georgetown
Exports: Mineral, textiles, shrimp (U.S., 33%)
Imports: (U.S.(23%, UK 31%)
Ports: Georgetown
Water: Atlantic Ocean
Features: Former Dutch, then British holding

PARAGUAY:

Capital: Asuncion
Exports: Processed foods, wood products (EU 37%, Brazil 25%)
Imports: (Brazil 32%)
Ports: None (One of two landlocked nations on the continent)
Water: Paraguay River
Features: Paraguay River allows access to Atlantic, landlocked

PERU:

Capital: Lima
Exports: Processed mineral/foods, coffee, fish products (U.S. 20%, EU 28%)
Imports: (U.S. 32%)
Ports: Callo, Chimbate, Mollendo
Water: Pacific Ocean, Ucayali River, Maranon River, Amazon tributaries
Features: Development concentrated in west along coast, very mountainous

SURINAME:

Capital: Paramaribo
Exports: Mineral, shrimp, timber (Norway 33%, Netherlands 25%)
Imports: (U.S. 37%)
Ports: Paramaribo
Water: Atlantic Ocean
Features: Large unexplored region inland, development along coast

URUGUAY:

Capital: Montevideo
Exports: Packaged meats, textiles (Brazil 28%)
Imports: (EU 27%)
Ports: Montevideo
Water: Atlantic Ocean, Uruguay River
Features: Excellent agricultural land, lack of major mountains

VENEZUELA:

Capital: Caracas
Exports: Iron ore, petroleum, petroleum/steel products, coffee (U.S. 50%)
Imports: (U.S. 44%)
Ports: Maracaibo, La Guaira, Puerto Cabello
Water: Caribbean Sea, Orinoco River
Features: Orinoco River (1,600 miles) drains 80% of nation

PANAMA:

Capital: Panama City
Exports: Bananas, pineapples, rare wood (U.S. 44%)
Imports: (U.S. 37%)
Ports: Balboa, Cristobal
Water: Pacific Ocean, Caribbean Sea, Gulf of Panama, Panama Canal
Features: Panama Canal provides access from Pacific to Atlantic, will become Panama-controlled in 2000.

SOUTH AMERICA

BOUNDARIES

International boundary

CITIES

- Sao Paulo
- Fortaleza
- Cusco
- Lima

A city's relative size is shown by the size of its symbol and lettering

National capital

0 250 500 750 1000 Miles

0 250 500 750 1000 Kilometers

Complete legend on page 5

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SOUTH AMERICA : Physical

SOUTH AMERICA

International boundary
Lima — National capital
Recife — Major city

ELEVATION

Meters	Feet
Over 6000	Over 20,000
3000 to 6000	10,000 to 20,000
1500 to 3000	5,000 to 10,000
600 to 1500	2,000 to 5,000
300 to 600	1,000 to 2,000
150 to 300	500 to 1,000
0 to 150	0 to 500

WATER DEPTH

Less than 200	Less than 600
Greater than 200	Greater than 600

0 250 500 750 1000 Miles
0 250 500 750 1000 Kilometers

Complete legend on page 5

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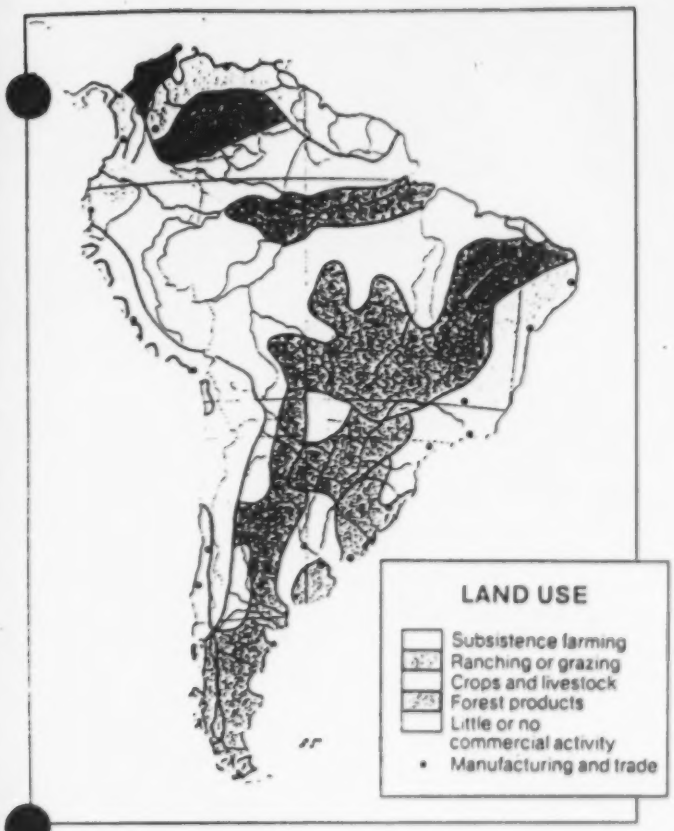

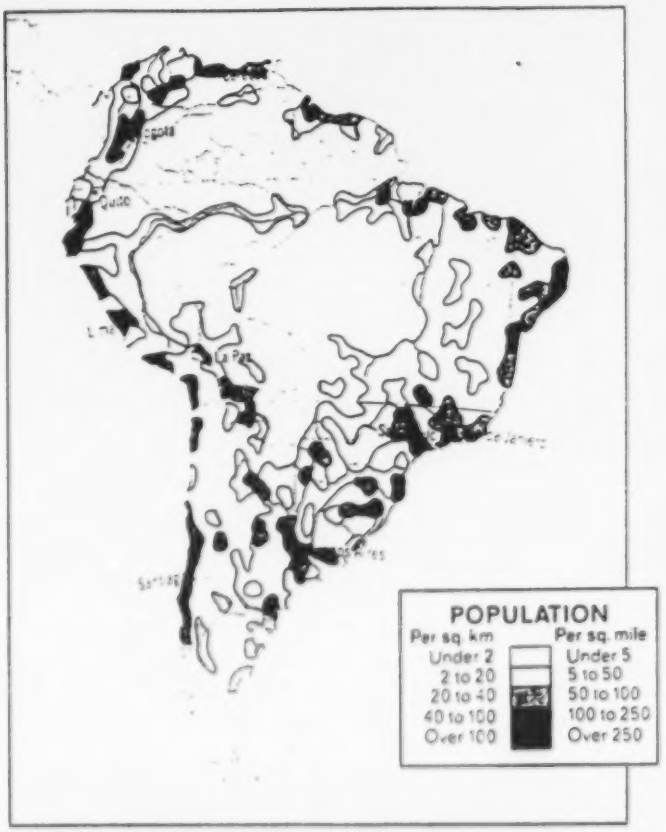

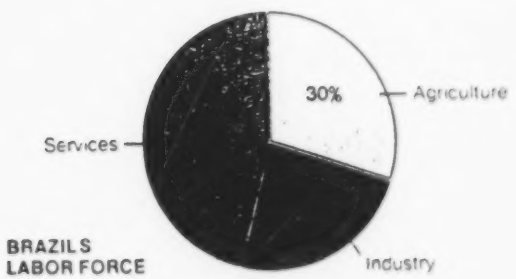

BRAZILS LABOR FORCE

Andes Mountains

SOUTH AMERICA:
Cross Section of the Continent

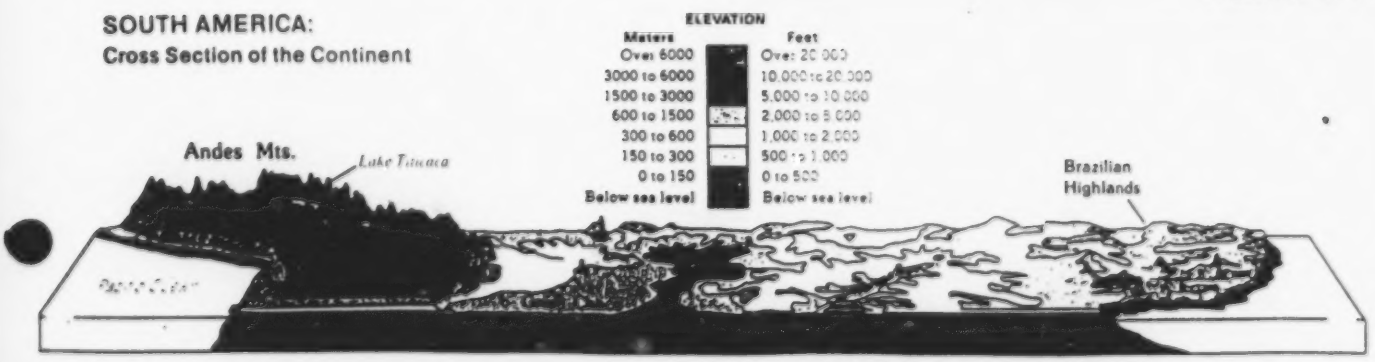

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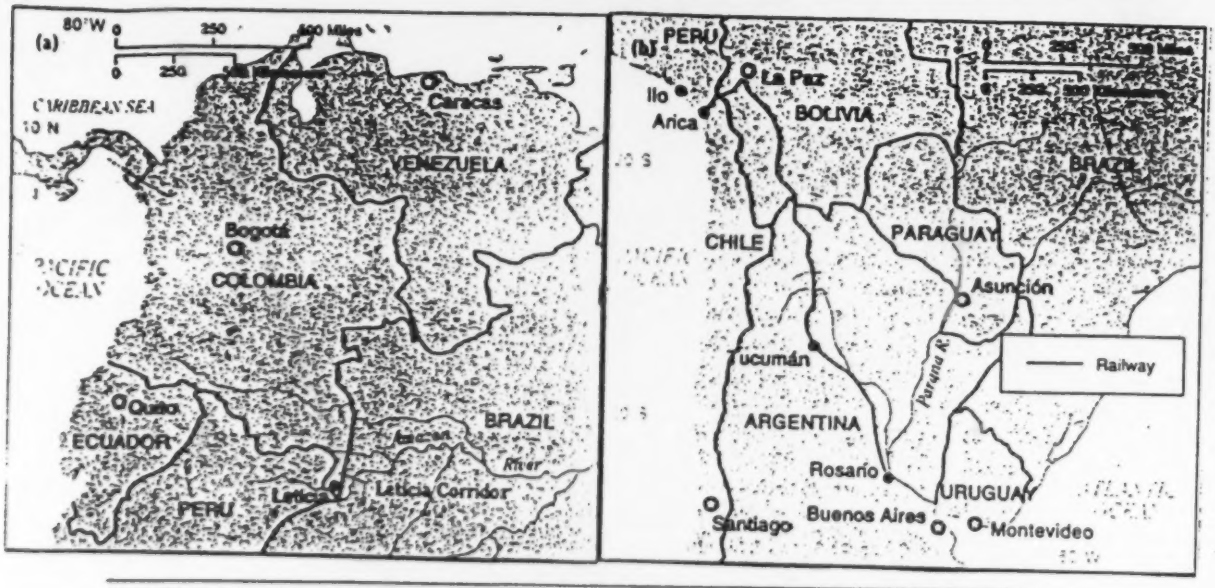
Figure 8-22. Highways in Brazil. The extent to which a country's transportation network is extensively and intensively developed affects interaction among its citizens and promotes national unity.

A Few Corridors



Several countries that would otherwise be landlocked have narrow corridors of territory reaching to provide access to the sea or to a navigable river. (Note: Sucre is technically the capital of Bolivia, but La Paz is the "seat of government.")

The Panama Canal

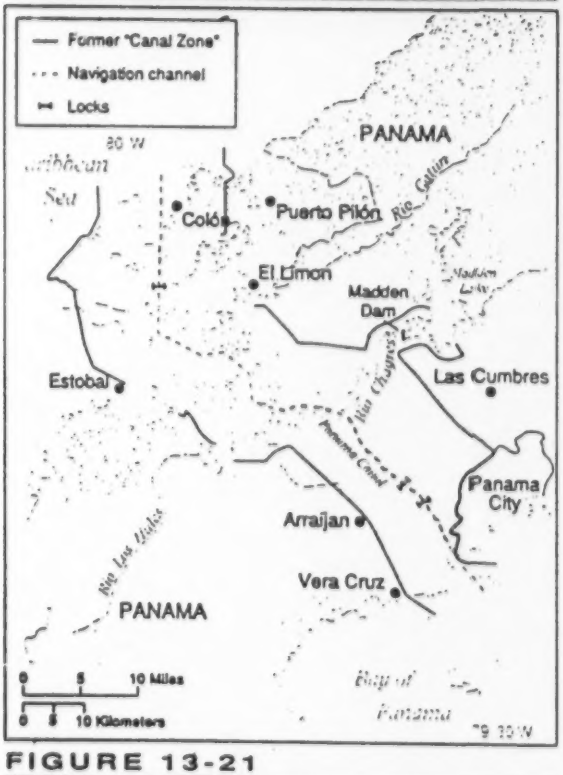


FIGURE 13-21

The Panama Canal is too small to accommodate many of today's ships, so an international group representing both governments and private interests in Panama, the United States, and Japan is considering reconstructing the Canal.

A Few Countries' Commodities Exports

Country	Export	Percentage of total exports
	South and Central America	
Bolivia	Natural gas	54
	Nonferrous metals	16
	Tin	15
Chile	Copper	32
	Fruit and nuts	11
	Concentrated metal ore	10
	Animal feed	8
El Salvador	Coffee	57
Venezuela	Crude petroleum	38
	Petroleum products	27

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MODULE 5 - AFRICA

Objectives:

1. To provide the class with an encompassing geographic perspective of Africa.
2. To provide the class with an understanding of the major exports and imports.
3. To familiarize the students with the significant physical features of Africa.
4. To illustrate to the class which trade variables are important in Africa.
5. To familiarize the students with the natural resources of Africa.
6. To identify the major trade routes within and around Africa.

Procedures:

1. Lecture will provide overview of the African continent.
2. Handouts and transparencies will supplement the lecture.
3. Students will be asked to contribute their knowledge to the discussion.
4. Students and instructor will discuss methods of map-reading and direction-giving in order to aid the students in their workplace.
5. Students will use their texts in order to follow and add to the discussion.

AFRICA

Africa is characterized by widespread economic, social and political strife. Poverty, hunger, and warfare keep this continent from establishing the basic infrastructure and communication networks that are necessary for strong trade markets. Civil wars in the area continue. Massive population growth is threatening to eclipse all other major problems, continuing Africa's depressed economies.

The nations of this continent need international assistance, development of their infrastructure, and industrial growth and trade. Once trade increases, the social problems that impede these nations can be addressed more successfully. That is why international help is needed more than foreign aid. The repayment of foreign aid tends to benefit the lenders. But the African nations need the benefits of any international initiatives.

The largely human-induced problems of this continent do not detract from the wealth of natural resources it holds. It is a very diverse continent with regard to its physical geography. It is a dynamic and variable continent with regard to climate, topography, vegetation, and relatively resource rich.

The African nations tend to extract and export mostly raw materials and import finished products.

There are large regions where subsistence agriculture is still the main activity. These areas do not factor into the trade/transport equation significantly. There are even societies still comprised of hunters and gatherers, like the Masai in Kenya.

Most of the nations have gained their independence within the last half-century, and many still have a strong dependence on the nations that colonized them. Africa is an extremely poor continent as a whole: all of the nations are considered Third or Fourth World countries. (See explanation of the Third and Fourth World on handout.)

The economic state of affairs has a major impact on the trade and transport of this continent, even more so than in South America.

There is a severe lack of major highways or railroads. The nations fortunate enough to have coastlines tend to concentrate their industry there.

The Sahara desert (which is expanding) in the northern portion of the continent limits the potential of this region due to lack of water, lack of established settlements and lack of infrastructure.

Similarly, in the equatorial nations, such as Zaire, the dense tropical rain forests are an obstacle to transport. This is true not only because of logistical problems, but because of the ever-increasing environmental concerns that are characteristic of today's world. Ironically, one of the keys to Africa's economic future may lie in the unique ecosystems and climatic zones it harbors. A quick look at this issue will show you how geography links the elements of the physical and social sciences.

Some researchers claim that more than 40% of the world's undiscovered species exist in the central African rain forests. This the second-largest remaining stand of the rain forest in the world after the Amazon. What is the value of the biodiversity that may exist there? Biodiversity is a relatively new term that geographers and biologists use to describe the amount of biotic diversity and quantity of biotic life in a given area.

The undiscovered species of this region, both plant and animal, may hold the key to new pharmaceutical products or adaptive characteristics that will benefit the world in some manner. The rain forest itself is an endangered type of ecosystem and may hold some benefit as a tourist attraction in the future.

Clearly, international resources and parties will have to play a role in the future, in order for Africa to make use of these resources.

The continent is rich in nonrenewable resources, that is, resources such as fossil fuels and minerals like diamonds. Renewable resources are things such as agriculture, water, etc.

Large percentages of key, strategic minerals such as manganese, aluminum, cobalt and chromium come from South Africa, Guinea and Zaire. As we have seen worldwide, the inability to add value to these resources the rough manufacturing and refining have hurt the African nations economically.

We talked about the corridors of South America last time. There are similar situations in Africa and the Middle East. Zaire has a narrow corridor to the Atlantic, and Iraq has a similar one to the Persian Gulf. These corridors enable these nations to have coastal ports for cargo transport. The nation of Namibia has a corridor (the Caprivi Strip) to the international Zambezi River, but it serves no significant trade function.

Africa has most of the world's landlocked nations. Not only are these countries economically depressed, but they must also now enter a hostile political world in order to secure rights to the oceans, to pass through territorial coastal waters and to enter harbors of foreign nations.

The nations that do have coastal borders can profit economically through fishing, transit tariffs and the leasing of facilities. These "Break-of-bulk" points can be hotbeds of economic activity but are often very concentrated.

In order to gain access to outside waterways and markets, landlocked nations must use these corridors and these inland rivers that are navigable. Then they must use facilities at a particular port and the right to transport cargo to and from their territory.

Despite the location of the Suez Canal at the end of the Mediterranean Sea, most of the world's oil is transported around the southern tip of the African continent (Cape of Good Hope). This fact is also true for the transport of the world's other major fossil fuel, coal. These routes correspond to the same shipping lanes used for iron ore and containerized freight.

Factors to consider in figuring the difficulties of transporting are the political and social environment in a region, tariffs, access rights, economic considerations, time, and physical limitations, e.g. large ships in a small channel.

Ethiopia is an example of the dynamics that characterize this region with regard to changing borders and transport needs. Up until 1993, Ethiopia had access to the Red Sea through its coastal province of Eritrea. When this nation gained its independence in 1993, Ethiopia became landlocked. Incidentally, Eritrea promised to assist Ethiopia with its import and export needs, but in reality most of Ethiopia's cargo is transported through the port of Djibouti on the Gulf of Aden.

The major defining physical features of the continent are the northern deserts and several large, navigable rivers.

The principal river is the Nile, which flows north across the northeast portion of the continent. Its length is 4,160 miles, making it the world's longest. This river dictates the region's economy to a great extent, because it provides crops for food and export (like cotton). There are numerous ports along the river, with the major city and port of Cairo at its mouth.

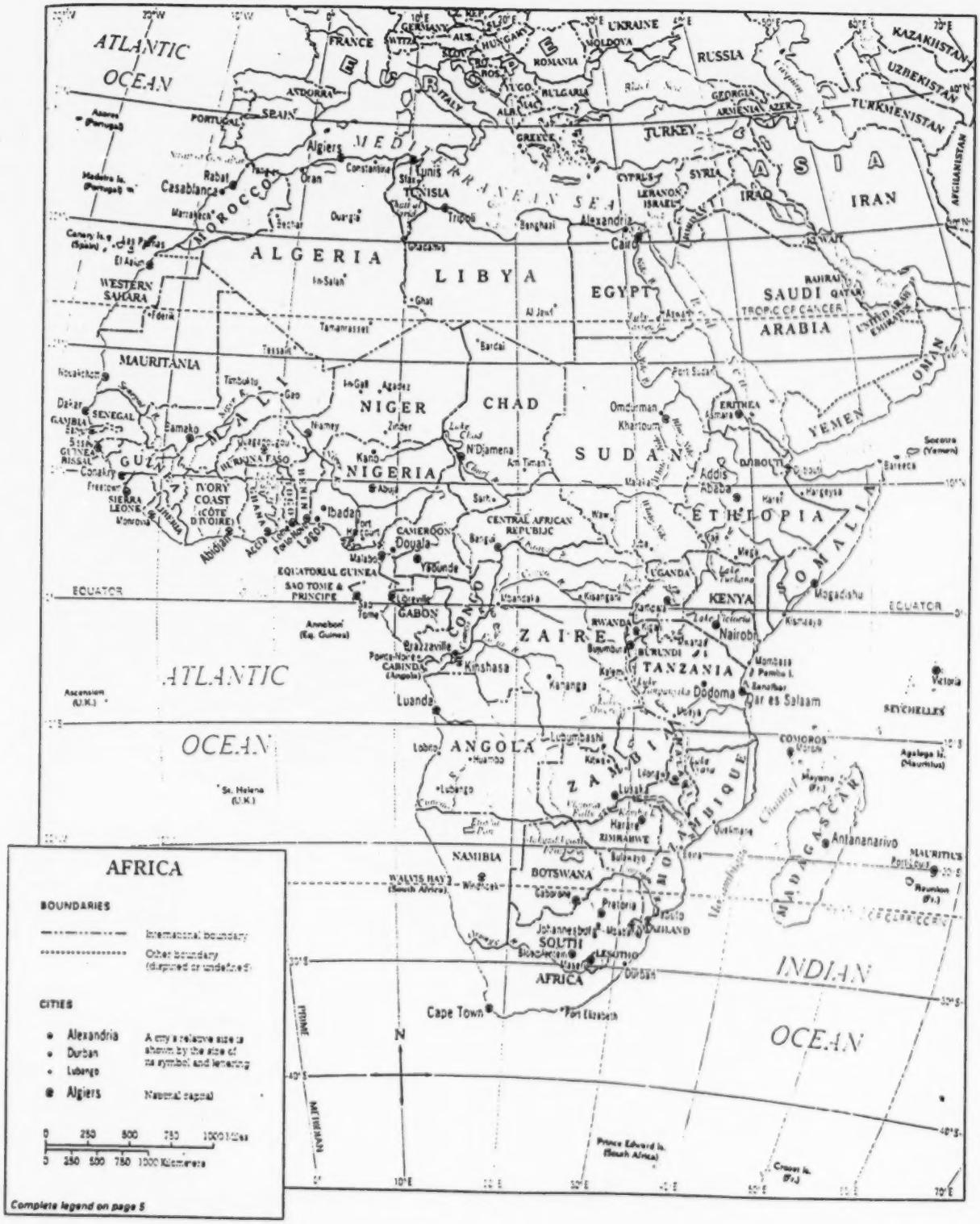
The Niger River in the west allows many of these nations access to the Gulf of Guinea and the Atlantic Ocean. It flows for 2,500+ miles in an arc from Guinea to southern Nigeria.

Other major rivers include the Congo, Case, Ubangi, Zambezi, Limpopo, Orange, Cuzana and Cunene.

In addition there are several major lakes which aid transport within the continent. These include Lake Chad (located in Chad), Lake Volta (Ghana), Lake Nasser (Sudan, Egypt), Lake Victoria (Uganda, Kenya, Tanzania), Lake Nyasha (Malawi) and Lake Tanganyika (Zaire, Tanzania, Burundi).

The major ports are scattered around the continent. They generally are at the mouth of the major rivers mentioned. The ports are Cairo (Egypt), Casablanca (Morocco), Cape Town and Port Elizabeth (South Africa), Lagos (Nigeria), Luanda (Angola), Algiers (Algeria), and Dijbouti (Dijbouti).

Some of the major inland ports along the rivers include Bamko (Mali), Niamey (Niger), Khartoum (Sudan), Mbandaka (Zaire), Kinshasa (Zaire), Gaborne (Botswana) and Aswan (Egypt).



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The Peoples of Africa

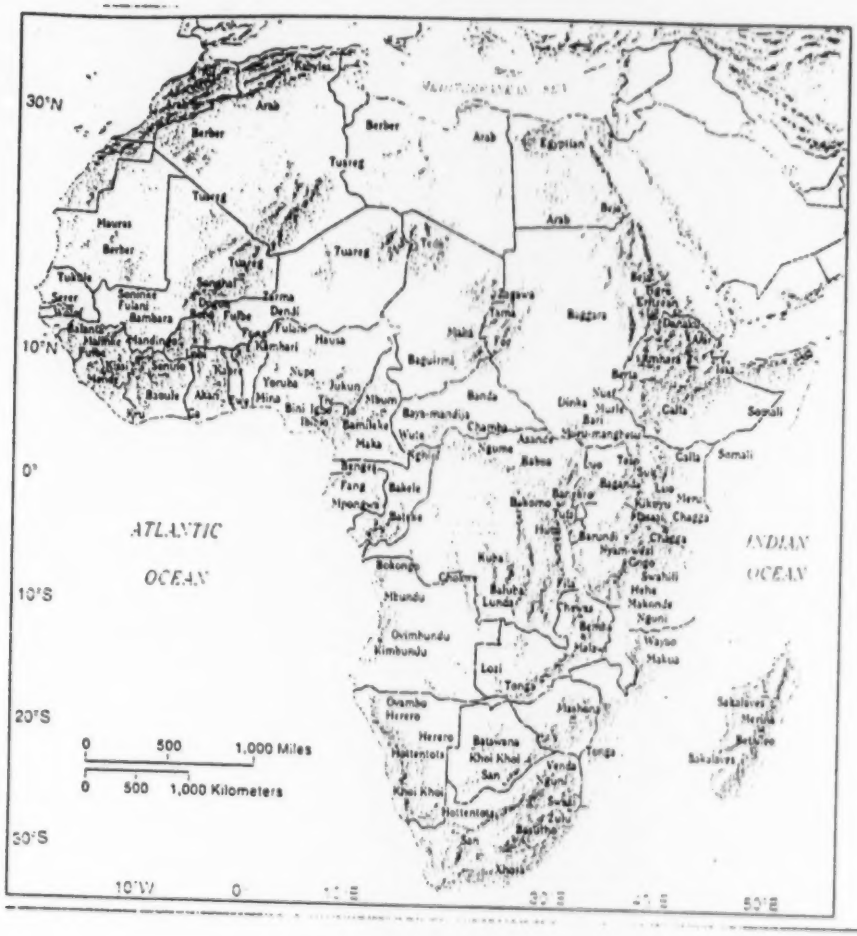

FIGURE 10-6

This map indicates the traditional territories of just a few of Africa's many indigenous peoples. The Europeans superimposed colonial boundaries, and when colonies attained independence as new states, civil wars and international wars broke out because the new states did not represent nations.

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The Third and Fourth Worlds

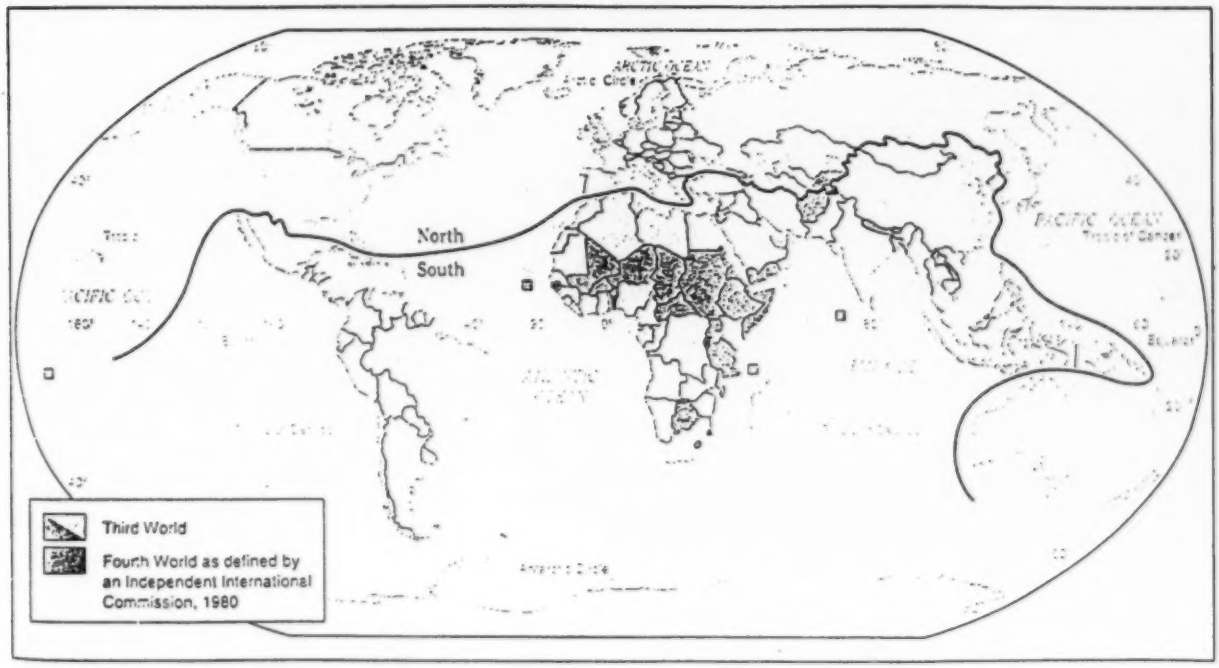

FIGURE 12-13

The term *Third World* confused Cold War political alliance with economic status, so efforts were made to "refine" it. Some scholars subdivided the Third World into a poorest "Fourth World." Others tried to differentiate a rich "North" of the world from a poor "South."

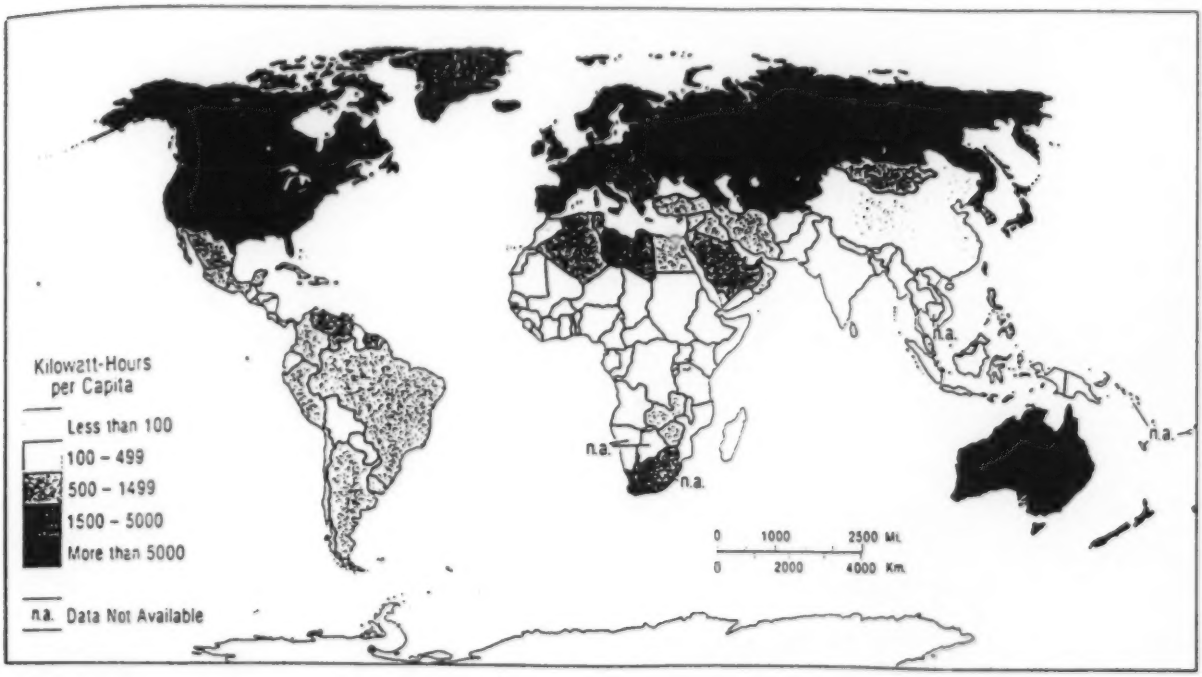

FIGURE 4.15
Annual consumption of electric power per capita, 1984. (Source: Based on data in Encyclopaedia Britannica, 1987.)

5-3

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Landlocked States and Strategic Straits

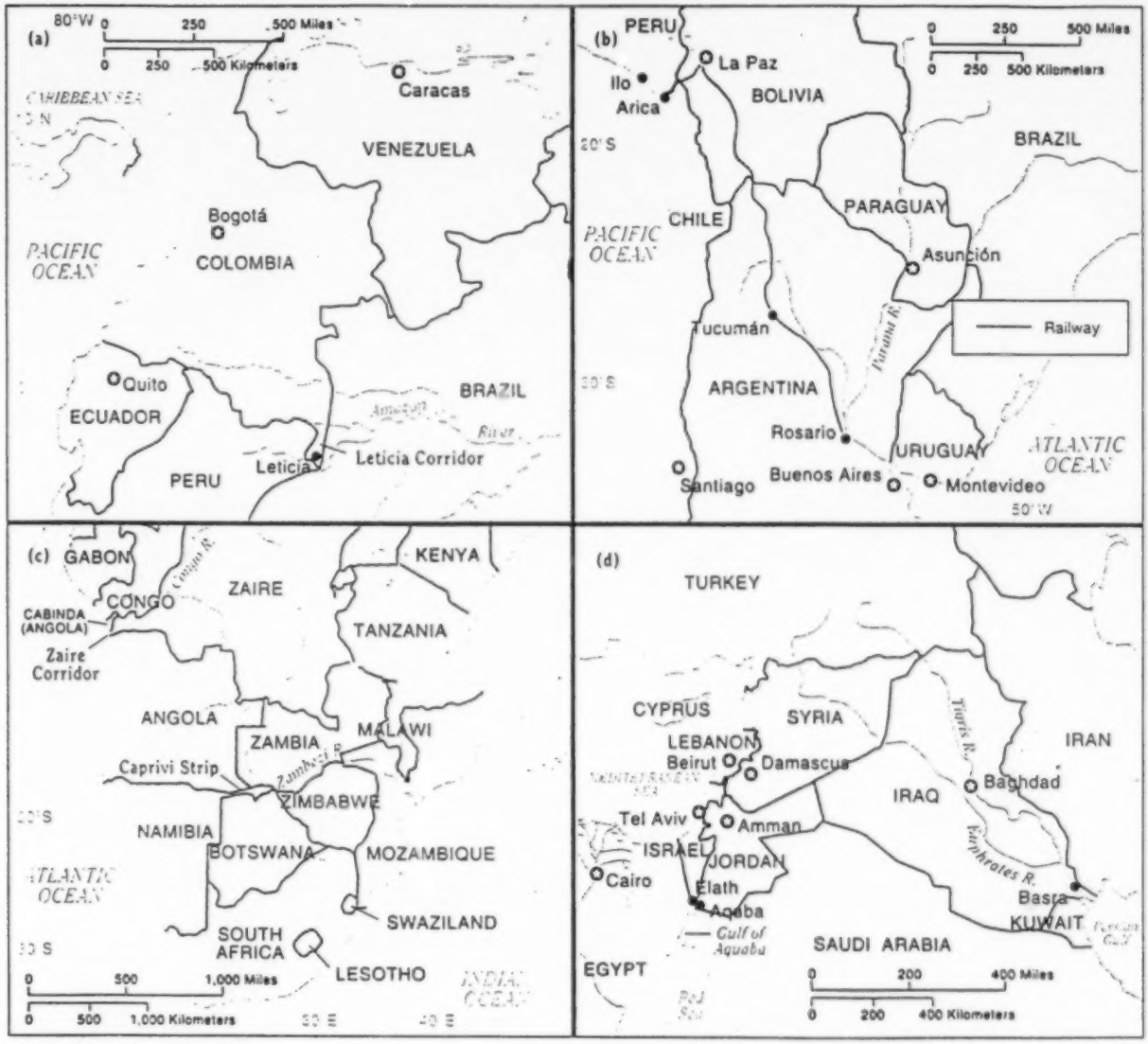

FIGURE 13-28

Several countries that would otherwise be landlocked have narrow corridors of territory reaching to provide access to the sea or to a navigable river. (Note: Sucre is technically the capital of Bolivia, but La Paz is the "seat of government.")

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MODULE 6 - The Middle East

Objectives:

1. To provide the class with a general impression of the Middle East.
2. To familiarize the class with the major geographical features there.
3. To provide the class with knowledge of the natural resources there.
4. To identify the major trade routes in the Middle East.
5. To emphasize the role that oil plays in the Middle East economy.
6. To provide the class with a working knowledge of the existing infrastructure.

Procedures:

1. Lecture on the general elements of the region.
2. Instructor will use transparencies to supplement the lecture.
3. Students will use their atlases in order to follow and add to the discussion.

THE MIDDLE EAST

The region is characterized by a variety of dynamic mechanisms. Natural resources are relatively abundant. Trade plays a major role for the economies of these nations. Access rights and boundary demarcations are areas of disagreement.

The origins of modern agriculture can be traced to this region. The Fertile Crescent, which encompasses the Tigris and Euphrates river valleys, is located here. There are indications of human populations, activities and technologies from more than 10,000 years ago in this area.

The region is more homogenous in its climatic characteristics than Africa or South America. Typically, a Mediterranean climate exists in the western coastal regions and a more continental climate is seen inland. Mediterranean climates are characterized by hot, dry summers and cool, wet winters.

Three of the world's major religions, Christianity, Judaism and Islam recognize Jerusalem as their main holy city. Historically numerous conflicts in the region have developed from religious differences or at least religious difference were given as the cause of numerous wars. Regional conflicts will almost certainly affect the trade relationships of those nations, either by limiting the access to certain areas or through embargoes by trade partners.

The region is still generally classified as Third World, but it is somewhat more prosperous than Africa. Oil is the major natural resource. Its export to other regions of the world is the main trade activity of the region. As we have seen previously, the region suffers because, while it does have oil refining complexes, they are owned or operated by international companies. Therefore, the Middle Eastern nations benefit relatively little, even though they control the resource itself. The lack of economic power does not mean that the region is not capable of dictating the world economy, as we saw in the late 1970's when the drastic increase in oil prices caused near panic in industrialized nations, particularly the United States.

None of the region's nations are landlocked, but many have to navigate the increasingly disputed waters of the region. The seas and straits that surround the Saudi Arabian peninsula are all relatively narrow and are significant corridors. They were the sites of the Iran-Iraq war of the 1980's and the Persian Gulf war of 1990-91.

The major water bodies in this region are the Mediterranean Sea to the west, the Black and Caspian Seas to the north, the Persian Gulf and Gulf of Oman to the

east, and the Red and Arabian Seas to the south. The Tigris and Euphrates rivers are the major inland waterways for the region. They are also very important to the region's agriculture, just as the Nile was in North Africa. The Tigris River which is slightly to the north and east is the shorter of the two at 1,180 miles in length. The Euphrates is about 1700 miles long.

There are two major inland lakes, Lake Van in Turkey and Lake Urmia in Iran. The significance of these lakes for trade is restricted to the areas adjacent to them. This differs somewhat from the impact of the longer lakes located in eastern and southern Africa.

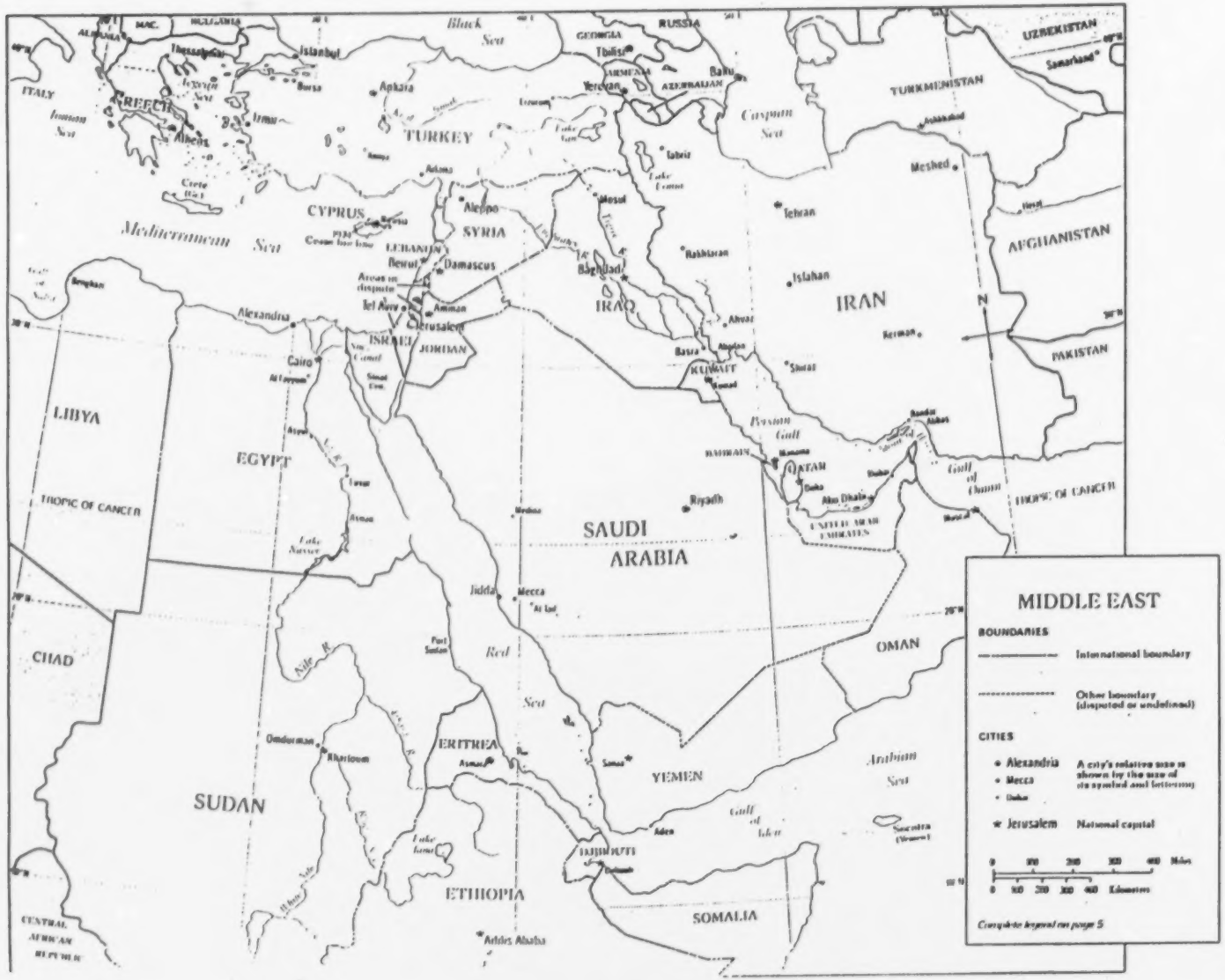
OPEC is the major trade association of the region. The Organization of Petroleum Exporting Countries includes the Persian Gulf nations of Iran, Iraq, Kuwait, Qatar, Saudi Arabia and the United Arab Emirates. Other OPEC members from around the world are Algeria, Libya, Nigeria, Gabon, Indonesia, Ecuador and Venezuela. OPEC is a major player in the international trade market. Its oil promotes the development of numerous other industries worldwide, i.e., automobiles.

The Suez Canal is adjacent to this region, but the Canal is not the typical route for oil tankers or other large energy resources, such as coal shipments.

Other major trade products include foods and military hardware.

The major ports of the region are Bandar in Iran; Basra in Iraq which is located at the mouth of the Tigris and Euphrates rivers; Haifa, Ashdod and Eilat in Israel; Beirut, Tripoli and Sidon in Lebanon; Aqaba in Jordan; Latakai and Tartus in Syria; Istanbul, Izmir, Mersin and Samsun in Turkey; Matrah and Muscat in Oman; Doha and Mysayid in Qatar; Jidda, Ad-Damman and Ras Tannurh in Saudi Arabia; Dubavy and Abu Dhabi in the U.A.E.; and Al-Hudaydah, Al-Mukha and Aden in Yemen.

The region has a lack of infrastructure, but does have an adequate highway system in general. Most of the major oil fields are located along the coasts where transportation or infrastructure are inadequate. Oil refiners use pipelines to reach ports.



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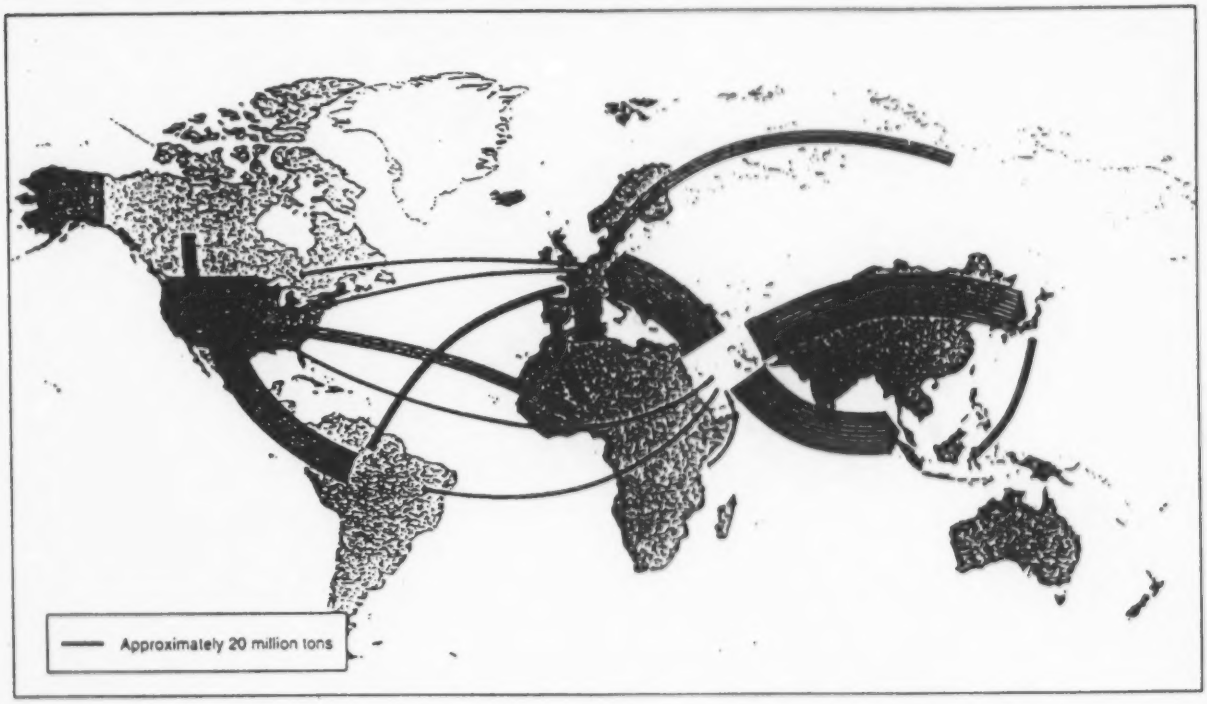
World Petroleum Trade, 1992



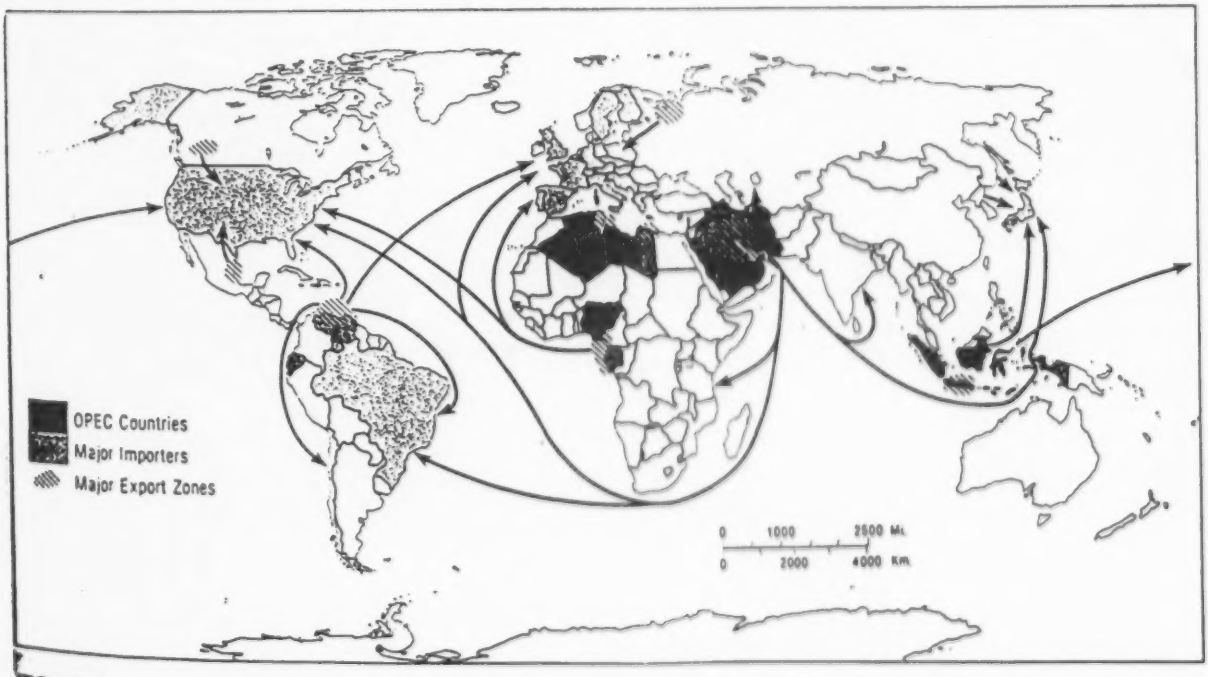


FIGURE 4.16
Major world oil flows. (Source: Based on data in United Nations, 1987.)

6-2

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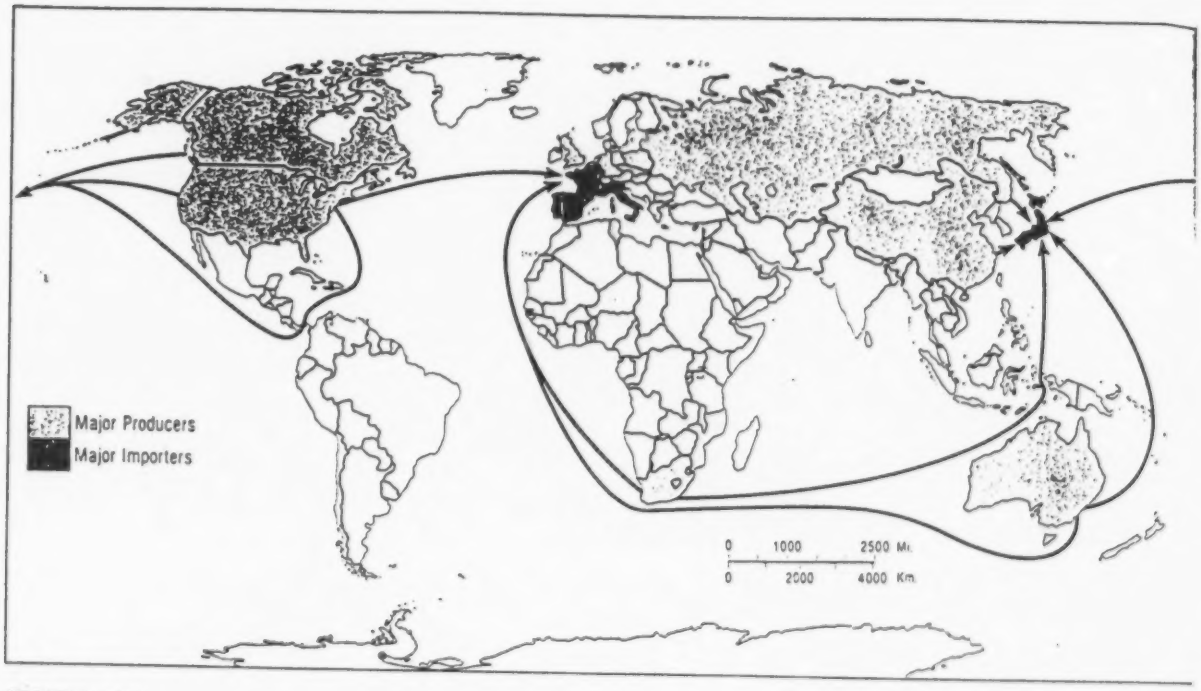

FIGURE 4.17
Major world coal flows. (Source: Based on data in U.S. Bureau of Mines, 1985.)

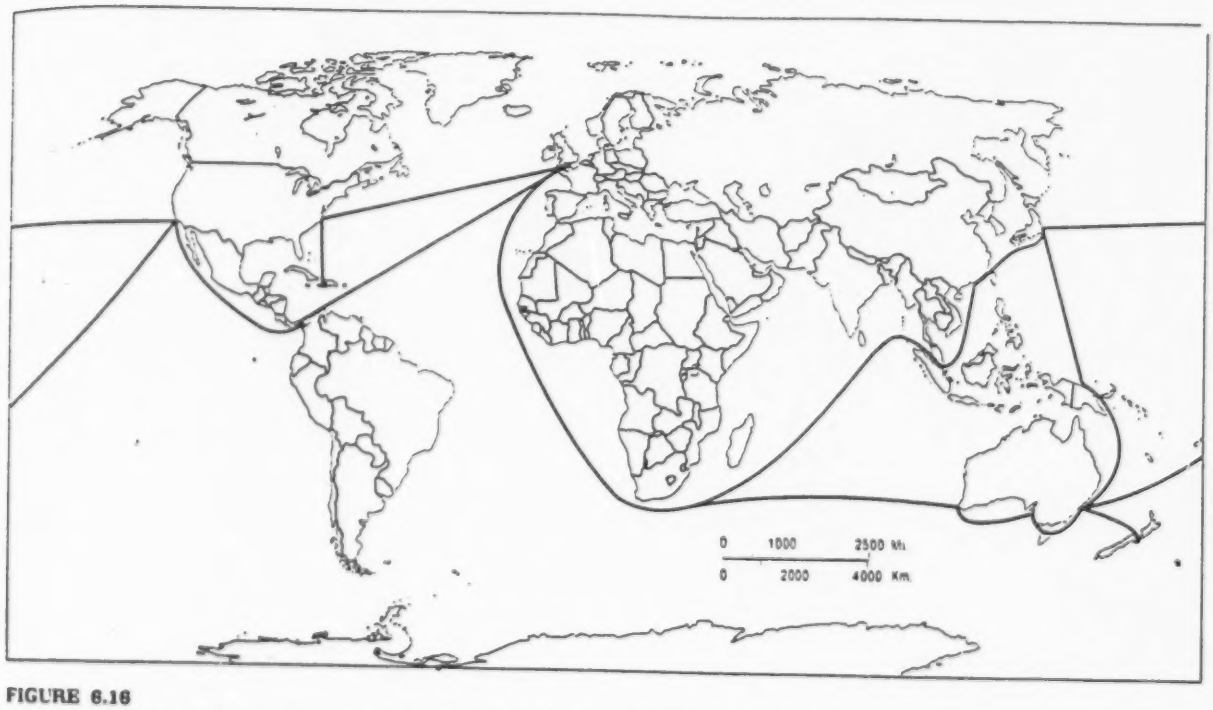

FIGURE 6.16
Major shipping lanes for containers. (Source: Based on Ewart and Fullard, 1973, p. 60.)

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MODULE 7 - NORTHERN, CENTRAL ASIA

Objectives:

1. To provide the class with an overview of Russia and India.
2. To illustrate the major themes which dominate trade in this region.
3. To familiarize the class with the significant physical features of Asia.
4. To provide the class with the name and location of the major ports.
5. To point out the location and type of natural resources.
6. To emphasize the cultural dynamics of the newly independent republics.

Procedures:

1. Lecture will provide an overview of the region.
2. Transparencies will also be used to supplement the lecture
3. The class will participate in the discussion by sharing their thoughts on the events that have occurred there recently.
4. The routes and relative importance of the major rivers will be discussed.

ASIA

This lecture will concentrate on the areas covered by the former Soviet Union, Russia and the nation of India. This is a very large area, with a variety of ethnic, cultural and physical differences.

What is the significance of the date December 26th, 1991? This is the date that the USSR formally disbanded, giving rise to numerous former republics, and a multitude of ethnic conflict. With the nullification of the Warsaw Pact in March of 1991, the former satellite nations have contemplated joining Western alliances such as NATO.

Economically, the former republics have organized themselves quickly into two major groups. One is the Black Sea Zone of Economic Cooperation which includes Turkey, Greece, Albania, Bulgaria, Armenia, Azerbaijan, Georgia, Moldovia, Ukraine, Romania, from June 25th, 1992. The other is the Commonwealth of Independent States (CIS). This organization includes Russia and all of the former republics, except for the Baltic nations (Estonia, Latvia and Lithuania) and Georgia. The western and southern regions of the former USSR are where the majority of the recent changes have occurred. The declaration of independence by a number of former Soviet republics has precipitated massive changes for this once uniform block of nations.

A great part of the region is endowed with large deposits of coal, oil and natural gas. Other exports include machinery and food products, particularly wheat and fish. There are a wide variety of climatic differences over this area, as well as a significant amount of variation in the physical landscape.

The coastal lowlands give rise to inland plateaus and eventually rise to the massive Himalayan Mountains in northern India. The Ural Mountains in central Russia, as well as the Caucus Mountains in northern Georgia, also present significant physical barriers.

There are a number of major rivers throughout these regions. In the countries of central Europe, the Danube is the most prominent, similar to the significance of the Rhine River in Europe. Besides the Danube, the Elbe, Oder, Vistula, Dnestr and Dnepr Rivers are important waterways in the region. Further to the east, the major river is the Volga. It flows south from St. Petersburg to the Caspian Sea. This is the major inland waterway of Russia. It has several large tributaries, such as the Vyatka and Oka River. A series of large reservoirs are found along the Volga.

There are other major rivers in Russia, such as the Ob and Yenisey as well as the Lena. All three of these rivers drain northward and help to transport goods and natural resources within the interior. The Amur River, which forms the border between Russia and China, drains a good portion of eastern Russia on its way to the Sea of Okhotsk and the Pacific.

The large inland lakes in Northern Asia, such as Lake Balkhash in Kazakhstan and Lake Baikal in Russia are similar to the lakes of the Middle East in that they only affect the trade of the adjacent areas.

Russia and its former republics benefit from a network of highways that connect the major cities and trade ports. This region also has a fairly extensive railway system, which enables the transport of coal and other raw materials to foreign markets. These railways tend to follow the same basic routes as the major highways. Both types of transport are more scarce in northern Russia and tend to increase in density in the west and to the south, especially along the Chinese border. The most prominent railway is the Trans-Siberian Railroad, which runs from Moscow to Vladivostock on the northeastern coast.

It is significant to note that the former Soviet Union was instrumental in developing ice-breaking technology for cargo ships. This development has and will continue to shorten the northern sea route between eastern Asia and Europe.

By losing the western republics, Russia lost not only a "buffer" zone from Europe, but an important link to the infrastructure that Europe maintains. Russia has the advantage of a significant coastline to the north, though it often impeded by ice. Also its proximity to Japan and China aid its trade.

An area in the Sea of Okhotsk is still contested by the Japanese and Russians. The Kuril Islands and the rich fishing waters around them are coveted by both nations but have been under the control of the Russians since the end of World War II.

Trade has burgeoned along the Russian-Chinese border in recent years. The downfall of the communism has opened a number of new channels and has increased market demands. For example, the Russian city of Blagoveschesk and the Chinese city of Heihe on opposite sides of the Amur River trade extensively. Machinery, vehicles and lumber are exported into China, and various consumer goods flow into Russia.

India and it neighbors

India has extensive highways and railroads, particularly for a poorer nation. This infrastructure aids it a great deal in trade. In Pakistan the Indus River provides a major inland waterway and an extensive coastline along the Arabian Sea which also aids Pakistan's transport. Karachi on the Arabian Sea is its principal port city.

Afghanistan is landlocked and therefore relies on land transport for shipping needs. It is a relatively poor nation, heavily agricultural. A majority of its trade is with CIS members. Trade with Pakistan flows through the Khyber Pass corridor in the Hindu Kush mountains.

India is well-situated for trade. It's the second most populous nation in the world after China. The Himalayan Mountains are to the north, effectively shutting off trade through this region. India has fertile land in the center, desert in the north and forests in the south. Even with large natural resources, over half the labor force is still in agriculture. The chief ports are Calcutta, Madras, Cochin, Vishakapatnam and Bombay. All are approachable by road and railway. Calcutta is located on a major river, the Ganges. Textiles, machinery, appliances and food products are the major exports.

Beside the Ganges River, the Narmada and Godavari Rivers are the principal inland waterways for India.

MODULE 8 - EAST ASIA, PACIFICA, AUSTRALIA

Objectives:

1. To look at the geography of this region.
2. To examine the major ports and trade relationships there.
3. To familiarize the class with the major physical features of the region.
4. To emphasize the potential for trade growth in this region.
5. To familiarize the class with the major products for export.
6. To emphasize the significance of Japan as a major trade power.

Procedures:

1. Lecture will cover the topics mentioned above.
2. Students will use their texts in order to follow the lecture material.
3. Transparencies will also be used to supplement the lecture material.

EAST ASIA, SOUTH PACIFIC AND AUSTRALIA

China is the third largest nation in the world after Russia and Canada. About two-thirds of the country is mountainous or desert, and only about one-tenth of the land is cultivated. However, the eastern portion of China is one of the most well-watered areas in the world. In fact, flooding in this region, has caused extensive famine by destroying crops, homes and towns.

The Gobi and Taklimakan Deserts cover the northern and western portion of the country, and the massive Himalayas are spread along its southern border.

In the north is the Amur River along the Russian border. The long Huang He (Yellow River) flows north from the Himalayan foothills and then turns south and east to empty into the Yellow Sea. The Yangtze River (third longest in the world) flows down from the Himalayas through the Sichuan basin on its way to the Pacific. Along the way it passes through several major cities including Congqing, Wuhan, Nanjing and finally Shanghai. In the south, the Xi Jiang River flows into the South China Sea. Hong Kong belongs to the United Kingdom until 1997 and Macao belongs to Portugal until 1999. Both are located at the mouth of this river. This is an important waterway for the mainland city of Canton, for the port of Hong Kong and for Macao's trade.

Other major rivers in China are the Brahmaputra which exits into the Bay of Bengal, the Salween River which flows down through Burma on its way to the sea, and the Red River which flows through Hanoi, Vietnam before exiting into the South China Sea. (The rivers of China often have several different names and spellings in Western atlases.)

The Da Yun Le (Grand) canal runs along the eastern coast and connects Beijing in the north with the city of Hangzhou, south of Shanghai. Another major physical feature is the Great Wall of China. Built over 2,000 years ago as a barrier against Mongol invaders, it is the longest man-made structure in the world. It stretches 1,500 miles from Beijing to the northwest portion of the country.

China has a very well-developed railroad system. It is the world's leader railroad development and is currently upgrading a good portion of the existing network. Major tracks run through the eastern portion of the nation, linking the major cities. One major line extends as far as the northwest border to the city of Jing. The tracks provide a major mode of transport for the massive amounts of coal mined in China.

The major ports are Shanghai (east), Qinhuangdao and Dalian (both east of

Beijing), and Canton (south, near Hong Kong).

China has the world's largest population, over one billion people with a variety of ethnic and cultural practices and regions. While it is very rich in resources, land and labor, it is still a Third World country, lacking economic stability to move ahead as a major industrial power. China will emerge from under-development in the next several decades.

HONG KONG

Hong Kong is a British holding at the mouth of the Canton River, with its capital at Victoria. Hong Kong harbor has been and will continue to be a very important naval and trading port, significant for international trans-shipment. Hong Kong has textiles, apparel, tourism, shipbuilding, iron, steel, fishing, cement, small manufactured items. Hong Kong has some of the world's largest textiles mills because of its concentrated population and low wages. It has a booming electronics industry as well.

TAIWAN

Taiwan's capital is Taipei, and it also has a very strong economy in commodities similar to China's. Its major ports are Kaohsiung, Keelung, Taichungn. It is located near the Chinese mainland between the South China Sea and the Yellow Sea. (Instructor could mention origins of Taiwan as a separate nation if so desires.)

JAPAN

Japan is comprised of 4 major island: Hokkaido, Honshu, Shikoku, and Kyushu.

It is a highly industrialized nation, with a large positive trade balance, due to a number of restrictive import policies. It is also a very populous nation, of 125 million, very crowed with density of 857 people per square mile. (Japan is slightly smaller than California, which has 31 million people in it.) Japan now contains the world's largest metropolitan area, Tokyo and Yokohama. Nearly 30 million people reside in this area.

Japan's largest port is Yokohama, with other points of trade at Tokyo, Kobe and Osaka, Nagoya, Kawasaki, Chiba and Hokodate (on Hokkaido).

Japan has a well-developed railroad system, and ferries run between the islands. The 33.4 mile long Seikan Tunnel completed in 1983, connects the islands of Hokkaido and Honshu by rail.

AUSTRALIA

Australia's capital is Canberra (between Sydney and Melbourne). It is a very sparsely populated nation, particularly in the center. It is rich in natural resources, but the population generally relies on ranching and sheep farming. Wheat, sheep, textiles and minerals are the chief commodities. The country is developed mostly in the south and southeast.

The major ports are Sydney, Melbourne, Geelong and Newcastle to the southeast. The city of Freemantle is the most significant port along the western coast. For the most part, the major rivers do not bisect the interior. They are concentrated in the southeast also, as one would expect from the population distribution. The Lachlan and Darling rivers empty into the Murray River and exit near Adelaide. Several rivers such as the Victoria and Flinders flow north to exit along that coast, but since there is a lack of development in the region, they play a minor role in trade activity.

Several major lakes are located in the south, Lake Gairder, Lake Torrens and Lake Eyre.

There are a number of small mountain ranges in the nation, but only the Great Dividing Range along the southeast coast is very significant. Australia's coast is similar to the Chilean coast in that a mountain range divides the fertile and populated coastal region from the inland portion of the nation.

The southern and eastern portion of the island are connected by railroad but not in the generally uninhabited interior. One spur does connect Tarcoola in the south with the interior settlement of Alice Springs.

Airports are the typical points of cargo consolidation and transport in the interior regions.

The nation has precious stone deposits (emeralds, etc.), mineral deposits (iron ore, gold, etc.) and major wine and ranching areas scattered throughout the country.